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HALF-YEARLY ABSTRACT
OF THE
MEDICAL SCIENCES.

JULY—DECEMBER.

1870.

THE
HALF-YEARLY ABSTRACT
OF THE
MEDICAL SCIENCES:

BEING

A DIGEST OF BRITISH AND CONTINENTAL MEDICINE,

AND OF

THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES.

Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis
CICERO.

EDITED BY

WILLIAM DOMETT STONE, M.D., F.R.C.S. (EXAM.)

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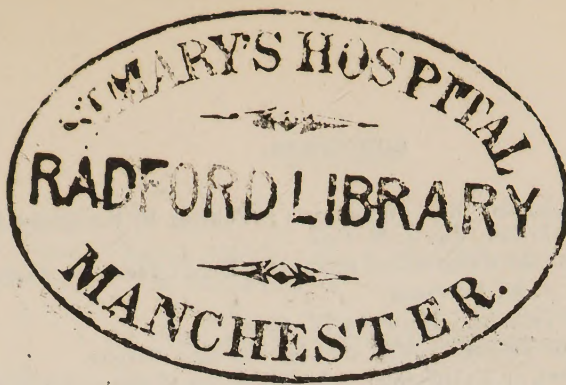
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CONTENTS OF VOL. LII.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

ART.	PAGE
1. On the Medical Aspects of the Germ Theory. <i>Dr. Benjamin W. Richardson</i>	1
2. On Putrefaction, Fermentation, and Infection. <i>Dr. Ernest Sansom</i>	11
3. On the Microscopical Appearances of Cancer. <i>Mr. Robert Hamilton</i>	12
4. Microscopical Characters of the Blood in Relapsing Fever. <i>Dr. H. C. Hand</i>	12
5. On the Nature and Origin of Paludal Miasms. <i>M. Balestra</i>	13
6. On the Preservative Agency of Lowered Vitality. <i>Dr. J. Milner Fothergill</i>	14
7. On Certain Circumstances which contribute to impede the Progress of Scientific Medicine and Surgery. <i>Dr. Campbell Black</i>	14
8. Experimental Researches on Suppurative Inflammation, and the Passage of Leucocytes through the Vascular Walls. <i>M. Picot</i>	15
9. On Scarlet Fever and its Prevention. <i>Dr. George Johnson</i>	17
10. Scarlet Fever. <i>Dr. Robert Druitt</i>	19
11. Bloodletting as a Remedy in Acute Scarlatinal Dropsy. <i>Dr. J. P. Bramwell</i>	21
12. On Scarlet Fever, with especial Reference to Pathology and Treatment. <i>Dr. R. Renfrew</i>	22
13. Case of Rötheln, or German Measles. <i>Dr. Charles Murchison</i>	23
14. On Abortive Typhoid Fever, or Typhoid Febricula. <i>Dr. A. Laveran</i>	27
15. Critical Study of Typhoid Fever. <i>Dr. Soulier</i>	28
16. On Muscular Lesions observed in Small-pox. <i>M. Quinquad</i>	29
17. On the Diagnosis, Prognosis, and Treatment of some of the Forms of Variola. <i>M. Desnos</i>	30
18. On the part played by Microzoa and Microphytes in the Genesis, Evolution, and Propagation of Diseases. <i>Dr. F. de Ranse</i>	32
19. Treatment of Lumbago. <i>Dr. Samuel Wilks</i>	34
20. Choleraic Infection. <i>Dr. Richard Lewis</i>	35
21. A Case of Addison's Disease. <i>Dr. T. P. Heslop</i>	35
22. Researches on the Alterations in the Weight of the Body of Syphilitic Subjects before and after Treatment. <i>Dr. Tomowitz</i>	37

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(a) *Concerning the Nervous System.*

23. Treatment of Delirium Tremens. <i>Dr. Charles Murchison</i>	38
24. On Visceral Neuralgia. <i>Dr. Albert Eulenburg</i>	42
25. On the Pathology of the Great Sympathetic. <i>MM. Eulenburg and Guttman</i>	45
26. On the Functions of the Sympathetic System of Nerves. <i>Dr. Edward Meryon</i>	46
27. A Case of Sick Headache. <i>Dr. Buzzard</i>	47
28. Epileptiform Convulsions of Sixteen Years' Duration from Parietal Depression: Trephining; Recovery. <i>Mr. Anthony Bell</i>	49

ART.	PAGE
29. Epileptiform Convulsions; Left Hemiplegia; Tumour in the Right Anterior Lobe of the Cerebrum. <i>Dr. J. R. Bell</i>	49
30. On the Nature of the Condition called Epilepsy. <i>Dr. J. Thompson Dickson</i>	50
31. On Apoplexy. <i>Dr. J. M. Da Costa</i>	51
32. Report of a Case of Tetanus. <i>Dr. John W. Ogle</i>	52
33. On the Pathogeny of Tetanus. <i>MM. Arloing and Leon Tripier</i>	53
34. Disseminated, Diffuse, or Multilocular Sclerosis of the Brain and Spinal Cord. <i>Dr. Meredith Clymer</i>	58
35. On the State of Muscular Contractility judged Comparatively by means of Continuous Currents and Currents of Induction in a Certain number of Cases of Paralysis, and on the Consequences which flow from this. <i>M. Ch. Robin</i>	59
36. On Shaking Palsy. <i>Dr. B. Ball</i>	60
37. The Etiology of Paresis. <i>Dr. W. H. O. Sankey</i>	64
38. On General Paralysis of the Insane following Local Lesions of the Brain, especially Cerebral Hæmorrhage. <i>Prof. Leon Colin</i>	65
39. Cases of Abdominal Neuralgia; Clinical Remarks. <i>Dr. Handfield Jones</i>	67
(b) Concerning the Respiratory System.	
40. On the Nature and Treatment of Croup. <i>Dr. J. H. Hobart Burge</i>	72
41. On the Treatment of Croup. <i>Dr. Daguillon</i>	74
42. Treatment of Croup. <i>Dr. Vogel</i>	75
43. On Diphtheria, and its Treatment. <i>Dr. William Marshall</i>	75
44. Case of Pneumonia; Enlarged Kidneys. <i>Dr. Henry Kennedy</i>	76
45. On Caseous Broncho-Pneumonia (Pulmonary Phthisis). <i>Dr. E. Aufrecht</i>	76
46. On the Expectant Treatment in Pneumonia. <i>Dr. Le Beuf</i>	79
47. Treatment of Hæmoptysis. <i>Dr. Dyce Duckworth</i>	80
48. On Local Inflammations in Certain defined Conditions as Causes of Pulmonary Phthisis. <i>Dr. Andrew Clark</i>	81
49. Treatment of Pulmonary Consumption. <i>Dr. James Turnbull</i>	82
(c) Concerning the Circulatory System.	
50. Specimens of Malformation of the Heart. <i>Dr. Thomas Peacock</i>	84
51. On the Classifications of Cardiac Perforations. <i>Prof. Alvarenga</i>	85
52. On Cyanosis. <i>Prof. Rokitansky</i>	86
53. Autopsy of a Case of Cyanosis. <i>Dr. W. H. Sheehy</i>	86
54. Cyanosis Neonatorum. <i>Dr. Charles D. Meigs</i>	87
55. Experiments on the Phenomena of which the White-Blood Corpuscles and the Walls of Capillary Vessels are the Seat during Inflammation. <i>M. Chas. Robin</i>	88
(d) Concerning the Alimentary System.	
56. Treatment of Aphthæ. <i>Dr. Eustace Smith</i>	90
57. The Coating of the Tongue. <i>Dr. J. M. Da Costa</i>	90
58. Ulcero-Membranous Angina. <i>Dr. J. M. Da Costa</i>	91
59. On Mucus Disease. <i>Mr. Walter Whitehead</i>	91
60. On the Nature and Treatment of Quinsy. <i>Dr. Moura</i>	92
61. On the Use of Raw Meat in Diarrhœa and Dyspepsia. <i>Dr. Robert Druitt</i>	93
62. Treatment of Acute Indigestion. <i>Dr. Thomas King Chambers</i>	94
63. On the Symptoms of Salivary of Amylaceous Dyspepsia. <i>Dr. Coutaret</i>	95
64. On Functional Dyspepsia. <i>Dr. George P. Andrews</i>	97
65. On the Diagnosis of Diseases of the Stomach and Oesophagus. <i>Dr. Samuel Wilks</i>	97
66. On the Treatment of Gastric Affections which occur during Pulmonary Phthisis. <i>M. Peter</i>	98
67. Specimen of Phlegmonous Gastritis. <i>Dr. Walter Moxon</i>	100
68. Case of Perforation of the Intestine. <i>Dr. Samuel Gordon</i>	100
69. Cases of Acute Dysentery. <i>Dr. John Murray</i>	101
70. Jaundice from Mental Emotion. <i>Dr. Wilks</i>	102

CONTENTS.

vii

ART.	PAGE
71. On Hepatic Colic. <i>Dr. Senac</i>	104
72. Notes of a Case of Biliary Fistula. <i>Dr. G. H. Philipson</i>	104
73. On Hepatic Fistulæ. <i>M. Signerolles</i>	105

(e) Concerning the Genito-Urinary System.

74. Bright's Disease. <i>Dr. Samuel Wilks</i>	107
75. Case of Acute Renal Dropsy. <i>Dr. Henry Thompson</i>	107
76. On the Origin of Diabetes, with some New Experiments regarding the Glyco- genic Function of the Liver. <i>Dr. W. T. Lusk</i>	109

(f) Concerning the Cutaneous System.

77. Anæsthetic Properties of Carbolic Acid. <i>Mr. Erasmus Wilson</i>	111
78. Tinea Circinata of the Hand. <i>Dr. Tilbury Fox</i>	112
79. Eczema: Its Nature and Treatment. <i>Dr. Tilbury Fox</i>	113
80. Unusual Form of Eczema Labialis. <i>Dr. Tilbury Fox</i>	114
81. On Bromidrosis. <i>Mr. Edgar A. Browne</i>	116
82. On Cutaneous Eruptions after Operations and during the Course of Surgical Septicæmic Affections. <i>M. Tremblay</i>	117
83. Contagious Impetigo. <i>Dr. Tilbury Fox</i>	118
84. On Purpura Hæmorrhagica. <i>M. Hayem</i>	118
85. Clinical Remarks on Prurigo. <i>Dr. Tilbury Fox</i>	120
86. On Ichthyosis. <i>Mr. George Naylor</i>	122
87. The Case of a Man who had a Vesicular Eruption on the Abdomen, which Dis- charged at times great Quantities of a Chylous Fluid. <i>Dr. William Roberts</i>	122
88. On the Vegetable Parasites of the Skin. <i>Dr. Alex. Davidson</i>	123
89. Treatment of Syphilis. <i>Dr. J. McCall Anderson</i>	124

SECT. III.—FORENSIC MEDICINE.

90. Poisoning by Strychnia Successfully Treated by Bromide of Potassium. <i>Dr.</i> <i>Charles B. Gillespie</i>	125
91. Chloral as an Antidote to Strychnia. <i>Dr. J. H. Bennett</i>	126
92. Blood-Pictures. <i>Dr. John Day</i>	127
93. Case of Suicidal Hanging. <i>Dr. Packard</i>	127

SECT. IV.—THERAPEUTICS.

94. On Vaccination	128
95. The Value and Safety of Arm-to-Arm Vaccination as a Protection against Small-pox. <i>Dr. A. B. Steele</i>	129
96. On Animal Vaccination; a new source of Vaccine Lymph. <i>Dr. P. M. Braid-</i> <i>wood</i>	132
97. Some New Remedies—Nitrite of Amyl, the Ethylates of Sodium and Potassium, and the Triethylic and Trimethylic Ethers. <i>Dr. Benjamin W. Richardson</i>	134
98. On Instruments: Ancient and Modern. <i>Mr. James Barnes</i>	136
99. Respiratory Therapeutics	137
100. The Bromides; their Physiological Effects and Therapeutic Uses. <i>Dr. L. C.</i> <i>McElroy</i>	139
101. Bromide of Potassium in Saccharine Diabetes. <i>Dr. Austin Flint</i>	139
102. Bromide of Potassium in Sick-headache. <i>Dr. L. P. Yandell</i>	140
103. On the Electrolytic Treatment of Hydatid Tumours of the Liver. <i>Dr. C. Hilton</i> <i>Fagge</i> , and <i>Mr. Arthur E. Durham</i>	141
104. On the Action of Carbolic Acid in Variola. <i>M. Isambert</i>	142
105. On Chloride of Aluminium. <i>Mr. Edward Lund</i>	143
106. On the Value of Iodide of Potassium in the Treatment of Syphilitic Skin Diseases. <i>Dr. J. McCall Anderson</i>	143
107. On the Influence of Iodide of Potassium over Salts of Mercury in presence of the various Organic Substances in the Animal Economy. <i>Mr. George E.</i> <i>Walker</i>	144

ART.	PAGE
108. Iodine as a Topical Application to Wounds, &c. <i>Dr. James Stirton</i>	145
109. On the Action of Alkalines upon the Organism. <i>MM. Rabuteau and Constant</i>	145
110. On Disinfectants. <i>Dr. F. de Ranse</i>	147
111. On the Sulpho-Carbolates, and the Antiseptic Method in Medicine. <i>Dr. A. Ernest Sansom</i>	148
112. Therapeutical Uses of Electricity. <i>Dr. J. Russell Reynolds</i>	148
113. Comparative Value of the Galvanic and Faradic Currents. <i>Dr. A. D. Rockwell</i>	151
114. Electrolysis in Bronchocele and other Tumours. <i>Dr. Adolphe Wahlteuch</i>	153
115. On the Value of the Different Methods of Electrization. <i>Dr. Duchenne</i>	154
116. On Hydrate of Chloral. <i>Dr. Martin Oxley</i>	155
117. Hydrate of Chloral in Pertussis. <i>Dr. Charles Murchison</i>	156
118. Ill Effects of Chloral; Clinical Remarks. <i>Dr. Habershon</i>	156
119. On the Influence exerted by Chloral on the Pain of Parturition. <i>Mr. E. Lambert</i>	157
120. Action of Hydrate of Chloral in Paralysis of the Insane and other forms of Insanity. <i>Dr. William Macleod</i>	158
121. Acetic Ether as an Anæsthetic. <i>Dr. Horatio C. Wood</i>	159
122. The true Normal Amylic Alcohol	159
123. On the Preparations of Conium and their Doses. <i>Dr. Henry Dodgson</i>	161
124. Apomorphia	162
125. On the Physiological and Therapeutical Actions of Conium and its Alkaloid. <i>MM. Martin Damourette and Pelvet</i>	163
126. On the Use of Arsenic in Certain Painful Affections of the Stomach and Bowels. <i>Dr. Arthur Leared</i>	168
127. Arsenic in Irritative Dyspepsia. <i>Dr. J. C. Thorowgood</i>	169
128. On Nitrate of Silver in Conjunctivitis. <i>Dr. Henry W. Williams</i>	169
129. Local Applications to Burns. <i>Dr. A. D. Binkerd</i>	170
130. A New and Most Useful Eye-salve in "Granular Lids" and all Cases of Chronic Ophthalmia. <i>Dr. John Williams</i>	171
131. The Use of Quinine in the Diseases of Childhood. <i>Dr. C. Bing</i>	171
132. On Sulphate of Quinine in the Treatment of Spontaneous Erysipelas of the Face. <i>Dr. Perroud</i>	172
133. On Mercury in the Treatment of Syphilis. <i>M. Gubler</i>	172
134. Bichloride of Mercury in the Treatment of Nervous Affections. <i>Dr. Samuel Wilks</i>	173
135. On Blistering in Urgent Cases. <i>Mr. J. H. James</i>	174
136. A Defence of Counter-irritation. <i>Dr. Alexander Davidson</i>	174
137. On the Use of Vinum Aloes in Ulceration. <i>Mr. Henry Frederick Nathan</i>	175
138. The Beneficial Effects of Combining Tonics with Aperients in Obstinate Constipation. <i>Dr. David Bell</i>	176
139. On the Employment of Creasote in the Treatment of Typhoid Fever. <i>M. Morache</i>	176
140. Veratrum Viride in Dysentery. <i>Dr. A. M. Rogland</i>	177
141. On the Application of the Laryngoscope. <i>Dr. J. M. Da Costa</i>	177
142. Epileptic Chorea of the Right Arm. <i>Dr. Thomas Laycock</i>	178
143. Syphilitic Insanity. <i>Dr. H. Grainger Stewart</i>	179
144. The Use of the Thermometer in the Diagnosis and Treatment of Insanity. <i>Dr. T. S. Clouston</i>	179
145. Table for the Examination of Urinary Calculi. <i>Dr. J. Campbell Brown</i>	180
146. On the Action of Belladonna in Arresting Nocturnal Incontinence of Urine. <i>Mr. J. Burney Yeo</i>	181
147. On the Influence of Section of the Cervical Pneumogastrics upon the Action of Emetics and Cathartics. <i>Dr. Horatio C. Wood, Jun.</i>	183

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

ART.	PAGE
148. Clinical Lectures on some Stray Subjects of Hospital Surgery. <i>Mr. Frederick C. Skey</i>	184
149. On Simple Dressings by Continuous Bathing. <i>M. Leon Le Fort</i>	197
150. Chilblains and Chapped Hands	198
151. On the Suppression of Pain after Operations. <i>M. C. Sedillot</i>	199
152. On the Results of Capital Operations before and after the Employment of Anæsthetics. <i>Prof. Ed. Simonin</i>	200
153. On Arterial Transfusion. <i>Prof. Hueter and Dr. Albanese</i>	201
154. On the Torsion of Arteries as a Hæmostatic Method. <i>Mr. John D. Hill</i>	203
155. On Skin Grafting. <i>Mr. George D. Pollock</i>	203
156. On Skin Transplantation. <i>Mr. George Lawson</i>	204
157. The Treatment of Ulcers and other Granulating Surfaces by Transplantation of Skin.	205
158. On the Treatment of Ulcers by Transplantation of Skin. <i>Mr. N. C. Dobson</i>	212
159. On Epidermic Transplantation. <i>M. Marc Sée</i>	212
160. On the Removal of Subcutaneous Tumours without Hæmorrhage or Loss of Skin. <i>Mr. Henry Lee</i>	214
161. On Osseous Regeneration after Sub-periosteal Articular Resections. <i>M. Ollier</i>	214
162. Case of Tetanus. <i>Dr. George H. B. Macleod</i>	217
163. On Tetanus. <i>Dr. David W. Yandell</i>	218
164. On Bullet-Wounds. <i>Prof. Billroth</i>	219
165. On the Reduction of Dislocations. <i>Dr. Warren Greene</i>	219
166. On a Rare Disease of the Joints. <i>Dr. Samuel Jackson</i>	220
167. The Treatment of Enlarged Lymphatic Glands. <i>Mr. Furneaux Jordan</i>	220
168. On Hospital Gangrene. <i>Dr. Wm. R. E. Smart</i>	221
169. On the Treatment of Ulcerated Neoplasms by Gastric Juice. <i>Dr. A. Menzel</i>	222
170. On the Laws which Preside over the Development of Syphilis. <i>M. Fournier</i>	224
171. On the Particular Mode of Transmission of Syphilis from the Nurse to the Child in Suckling. <i>Dr. A. Dron</i>	228
172. The Treatment of Syphilis by Repeated Inoculations of Matter derived from Venereal Sores: so-called Syphilization. <i>Dr. Freeman J. Burnstead</i>	228
173. On the Early Stages of Syphilis as affecting the Skin. <i>Mr. Edgar A. Browne</i>	229
174. A Practical Treatise on Acupressure. <i>Dr. Joseph C. Hutchison</i>	231

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(a) *Concerning the Head and Neck.*

175. On a New Method of Effectually Remedying the Defect of Hare-lip. <i>Dr. William Stokes, Jun.</i>	232
176. On Two Cases of Excision of Tonsil, followed by Hæmorrhage. <i>Dr. Wharton P. Hood</i>	233
177. Case of Blood Tumour of the Head. <i>Dr. George H. B. Macleod</i>	233
178. A Case of Removal of a Penny which had been impacted for Six Years in the Larynx. <i>Dr. John Cameron</i>	234
179. On Primary Cancer of the Larynx. <i>Dr. Desormeaux</i>	235
180. A Case of Broken Neck, Spinal Cord almost severed at Level of Third Intervertebral Cartilage. <i>Dr. J. Fayrer</i>	236
181. Two Cases of Stricture of the Oesophagus. <i>Dr. Morell Mackenzie</i>	238
182. Optic Neuritis. <i>Mr. Brudenell Carter</i>	239
183. Notes on the Treatment of Ulcers of the Cornea and Nebulæ. <i>Mr. T. Shadford Walker</i>	240
184. On Albuminuric Retinitis. <i>Dr. Argyle Robertson</i>	246
185. On Palpebral Granulations. <i>Dr. Hilarion</i>	247
186. On the Treatment of Cicatricial Ectropion by Palpebral Occlusion. <i>Dr. Mirault</i>	247

ART.	PAGE
187. On the Methods of Treatment to be adopted in the various Lesions of the Lachrymal Apparatus. <i>Mr. Thomas Bickerton</i>	248
188. On Irrigation of the Membrana Tympani with Tepid Water. <i>M. Prat</i>	249
189. On the Cause of the Special Gravity of Anthrax and Boils of the Face. <i>M. G. Reverdin</i>	249
190. Recollections of Work in an Ambulance. <i>M. William MacCormac</i>	250
191. On the Diagnosis of Fracture of the Cranium. <i>Dr. H. Le Debeeder</i>	251
192. Tumour of the Bones of the Skull. <i>Dr. L. R. Thomson and Dr. A. G. Miller</i>	251
193. Partial Excision of the Tongue. <i>Dr. George H. B. Macleod</i>	252
194. Cases of Traumatic Facial Paralysis. <i>Prof. Erb</i>	253

(b) Concerning the Trunk.

195. Partial Removal of the Breast for Scirrhus. <i>Mr. Luther Holden</i>	254
196. Case of Aneurism of the Aorta. <i>Mr. Christopher Heath</i>	255
197. Report of a Case of Extirpation of the Kidney. <i>Prof. Simon</i>	255
198. Case of Fatal Injury to the Kidney in a Subject Possessing only one Kidney. <i>Mr. James Taylor</i>	257
199. Case of Fracture of the Anterior Superior Spinous Process of the Ilium by Muscular Contraction. <i>Dr. S. Joy, and Dr. J. Wallace McWhinnie</i>	259
200. Remarks on the Treatment of Recent Irreducible Herniæ. <i>Mr. C. Holthouse</i>	259
201. Improved Operation for Fistula in Ano. <i>Mr. Weedon Cooke</i>	261
202. Method by which After-treatment in Operation for Fistula in Ano is rendered Unnecessary. <i>Dr. J. J. Chisolm</i>	261
203. On the Treatment of Hydrocele of the Tunica Vaginalis by Injection of Warm Water. <i>Prof. Albanese</i>	262
204. On the Employment of Perchloride of Iron and of Manganese in Cases of Necrosis, Fistulous Tracts, and Hydrocele. <i>Prof. Giosuè Marcacci</i>	263
205. On Spermatorrhœa. <i>Mr. F. W. Teevan</i>	264
206. The Abortive Treatment of Urethritis. <i>Dr. Alex. W. Stein</i>	264
207. On Internal Urethrotomy. <i>Sir Henry Thompson</i>	265
208. On External Urethrotomy. <i>Sir Henry Thompson</i>	265
209. Treatment of Impermeable Stricture of the Urethra by External Perineal Urethrotomy. <i>Mr. William Stokes</i>	266
210. On the Treatment of Strictures of the Urethra by the Introduction of Horse-hair and Perforated Bougies. <i>Dr. Mitscherlich</i>	267
211. An Analysis of One Hundred and Forty Cases of Urinary Stricture. <i>Mr. John D. Hill</i>	269
212. A Case of Amputation of an Inverted Uterus. <i>Dr. Wilde</i>	270
213. On the Effects of Congenitally Small Urinary Meatus in the Male. <i>Mr. Furneaux Jordan</i>	271
214. On Twenty Cases of Stone in the Bladder. <i>Mr. W. F. Teevan</i>	271
215. On the Cure of the Chronic Perforating Ulcer of the Bladder by the Formation of an Artificial Vesico-vaginal Fistula, as Practised by the late Sir J. Y. Simpson. <i>Mr. Lawson Tait</i>	272
216. Elephantiasis of Scrotum and Leg, treated by Removal of the Tumour and Ligation of the Femoral Artery. <i>Dr. J. Fayer</i>	274
217. A Case of Large Serpiginous Phagedænic Chancre cured by a Provoked Attack of Erysipelas. <i>M. Desprès</i>	275
218. On the Diagnosis and Prognosis of Venereal Buboës. <i>Prof. Zeissl</i>	276

(c) Concerning the Upper Extremity.

219. Specimen of Dislocation of the Wrist. <i>Mr. James E. Adams</i>	277
220. Observation on Fractures of the Sternal Extremity of the Clavicle. <i>Dr. Robert W. Smith</i>	278
221. Removal of a Tumour of the Lower Part of the Humerus. <i>Sir Wm. Fergusson, Bart.</i>	279
222. Excision of the Shoulder-Joint. <i>Mr. Reginald Harrison</i>	280

(d) *Concerning the Lower Extremity.*

ART.	PAGE
223. Case of Femoral Aneurism Cured by Rapid Pressure. <i>Mr. John Russell</i>	281
224. Popliteal Aneurism; Failure of Flexion and Compression; Incision of the Sac, and Ligature of the Artery. <i>Mr. Henry Smith</i>	282
225. Successful Ligature of the Superficial Femoral Artery on Lister's Plan. <i>Dr. C. J. Gibb</i>	284
226. On Inguinal Phlebitis consecutive to Compression of the Femoral Artery in the Fold of the Groin. <i>M. Henri Petit</i>	285
227. On the Subcutaneous Division of the Neck of the Thigh-bone, as compared with other Operations for rectifying Extreme Distortions at the Hip-joint with Bony Anchylosis. <i>Mr. William Adams</i>	291
228. Excision of the Hip-joint—Clinical Remarks. <i>Mr. Wood</i>	292
229. Caries of Condyle of Femur—Suppuration of Knee-joint—Amputation above the Condyles of the Femur, with Teale's flaps—Recovery. <i>Mr. Hulke</i>	293
230. Supra-Condylod Fracture of Femur with Protrusion of Bone and Effusion of Blood and Air into Knee-joint—Recovery, with Perfect Movement of the Articulation. <i>M. Le Fort</i>	294
231. Acute Inflammation of Knee-joint—Amputation, with Teale's flaps, above the Femoral Condyles—Recovery. <i>Mr. Shaw and Mr. Hulke</i>	294
232. Periostitis and Caries of Tibia—Suppuration of Knee-joint—Amputation above the Condyles of the Femur, with Teale's flaps—Recovery. <i>Mr. Shaw and Mr. Hulke</i>	295
233. On Supra-Condylod Amputation of the Thigh. <i>Dr. Wm. Stokes, jun.</i>	295
234. Dislocation of Hip into the Thyroid Foramen—Reduction with Aid of Pulleys, after Failure by Manipulation. <i>Mr. De Morgan</i>	297
235. On a Case of Dislocation of the Hip-joint Downwards and Inwards, reduced by Manipulation. <i>Mr. Joseph Lister</i>	297
236. Case of Spontaneous Fracture of the Femur. <i>Mr. Arthur Durham</i>	298
237. A Case of Syphilitic Gummatous Tumour occurring Fifty-five Years after the Commencement of the Infection. <i>M. Alfred Fournier</i>	299
238. Myxomatous Tumour in the Calf—Operation—Recovery. <i>Mr. Christopher Heath</i>	301
239. A Case in which two Diarthrodial Cartilages had been United by Means of True Cartilage. <i>M. Panas</i>	302
240. On the Treatment of Rupture of the Ligamentum Patellæ by Elevation and Im-mobility of the Lower Limb upon an inclined Plane. <i>Dr. Sistach</i>	303

PART III.—MIDWIFERY.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(a) *Concerning Pregnancy and Parturition.*

241. Mechanism of Production and Face Presentation. <i>Dr. J. Matthews Duncan</i>	306
242. Remarkable Case of Complex Labour. <i>Dr. Thomas Moore Madden</i>	306
243. State of the Pulse immediately before and immediately after Parturition. <i>Dr. Hémeý</i>	308
244. Pregnancy without Menstruation. <i>Dr. James Young</i>	311
245. Case of Extra-uterine Pregnancy. <i>Dr. J. Hall Davis</i>	311
246. Acute Leucocythemia in Connexion with Pregnancy. <i>Dr. R. Paterson</i>	312
247. The Stethoscope as a Means of Ascertaining the Sex of the Child. <i>Dr. James Cumming</i>	313
248. Uterine Hæmorrhage. <i>Dr. Robert Barnes</i>	314
249. Diet of Parturient Women. <i>Dr. Hugh Miller</i>	315
250. On the Application of Long Forceps. <i>Dr. Robert Barnes</i>	315
251. A Case of Induction of Premature Labour by Means of the Uterine Douche. <i>Mr. W. Whalley</i>	316
252. On the Influence of Constitutional Syphilis upon Pregnancy. <i>Dr. Weber</i>	316
253. On Placenta Prævia. <i>Dr. T. Gaillard Thomas</i>	318
254. On Tumours of the Pelvis Obstructing Delivery. <i>Dr. Edward Copeman</i>	318
255. Puerperal Convulsions. <i>Dr. Hall Davis</i>	320

(b) *Concerning the Diseases of Women.*

ART.	PAGE
256. On Milk Fever	321
257. On the Symptoms and Diagnosis of Membranous Dysmenorrhœa. <i>MM. Huchard and Labadie-Lagrave</i>	322
258. Principles of Treatment at the Change of Life. <i>Dr. Edward John Tilt</i>	327
259. Uterine Hydatids supposed to be the Change of Life. <i>Dr. Edward John Tilt</i>	329
260. Styptic Colloid in Ulceration of the Os Uteri. <i>Dr. Wynne</i>	330
261. On Uterine Pathology at the Change of Life and after the Menopause. <i>Dr. E. J. Tilt</i>	330
262. A Case of Coccyodynia. <i>Dr. W. R. Fox</i>	331
263. Indian Hemp in Menorrhagia and Dysmenorrhœa. <i>Dr. Alexander Silver</i>	331
264. On a New Instrument for Securing the Pedicle in the Operation of Ovariectomy. <i>Dr. Graily Hewitt</i>	331
265. New Operation of Embryotomy by the Wire Ecraseur. <i>Dr. Robert Barnes</i>	332
266. On Air in the Vagina. <i>Dr. Rasch</i>	332
267. On a Form of Functional Hemiplegia seen in Child-bearing Women. <i>Dr. Clifford Allbutt</i>	333
268. A Case of Absence of the Vagina. <i>Dr. Pallen</i>	334
269. Lardaceous Disease of the Kidney Consequent on Abscess of the Ovary. <i>Dr. William H. Dickinson</i>	334
270. On the Determination of the Length of the Pedicle in Ovarian Disease. <i>M. Tixier</i>	335
271. On Peri-uterine or Pelvic Hæmatocele. <i>Dr. F. Kuchenmeister</i>	336
272. Treatment of Irritable Uterus. <i>Dr. Hugh L. Hodge</i>	338
273. On the Connexion between Inflammatory Conditions of the Uterus and its Displacements. <i>Dr. Henry Bennett</i>	339
274. On Strangulation of the Uterus. <i>Dr. Graily Hewitt</i>	339
275. On Acute Inversion of the Uterus. <i>Mr. Thomas More Madden</i>	340
276. The Histories of Four Cases of Chronic Inversion of the Uterus. <i>Dr. Thomas Gaillard Thomas</i>	340
277. On Intra-Uterine Medication. <i>Dr. J. C. Nott</i>	342

(c) *Concerning the Diseases of Children.*

278. On Temperature Deviations in the Diseases of Children. <i>Mr. William Squire</i>	347
279. On Tubercular Meningitis. <i>Dr. Vogel</i>	349
280. Intussusceptio in an Infant Cured by Inflation of the Bowel. <i>Dr. Wilks</i>	349
281. Vomiting and Purging in Cholera Infantum. <i>Dr. B. M. Wible</i>	351
282. On the Treatment of Chronic Hydrocephalus. <i>Dr. W. Howship Dickinson</i>	351
283. Antiphlogistic Treatment in Diseases of Children. <i>Dr. A. Jacobi</i>	353

HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

ETC.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

ART. 1.—*On the Medical Aspects of the Germ Theory.**

By BENJAMIN W. RICHARDSON, M.D., F.R.S.

(*Medical Times and Gazette*, October 29 and November 5.)

THIS paper was a rigid analysis of the germ theory in its direct relations to the diseases which, as some presume, owe their origin to the introduction of living self-productive germs into the body.

Dr. Richardson eliminated altogether from his argument the general question of generation. He had nothing whatever to do with the origin of life, and if he had he should simply bend and say, as a wonderful authority said ages ago, that whereas once there was no life, then life was made out of the earth, and then it continued, that he can comprehend no more, nor tell whether the original process had ever or had never been repeated. He dealt, therefore, exclusively with the germ theory in its bearings on disease.

Turning to the diseases involved in the subject in hand, Dr. Richardson proceeded to point out that, however much Medical men may seem to differ on some questions, there are certain beliefs held in common. We march in two divisions, perhaps more, but for a certain distance we all march on the same road.

We agree thus far: we agree that there are certain diseases which owe their origin to what, for the moment, may be designated, without further definition, "*poisons*." We agree that these poisons are organic in their construction; that they are specific in that they possess the power of inducing specific phenomena of disease; that they are transmissible; that they are communicable under given and well-understood

* Abstract of a Paper read at a Meeting of the Medical Society of London, October 24.

conditions; and that, as poisons, they admit of being reduced to the state of matter which we call solid. We are agreed on the point that the poisons are distinct from other poisons with which they are sometimes in communion—such as the gases of decomposition, which, though offensive and, in one sense, poisonous, are not poisonous in the light of contagious or infectious poisons. Lastly, we are pretty well agreed as to the diseases which are proved to be due to these organic poisons. We are nearly as one in accepting the following diseases:—

Small-pox.	Puerperal fever.
Measles.	Cholera.
Scarlet fever.	Yellow fever.
Diphtheria.	Syphilis.
Typhus fever.	Gonorrhœa.
Typhoid fever.	Ague.
Erysipelas.	Glanders.
Hospital or pyæmic fever.	Spreading ophthalmia.

This common agreement is no mean measure of agreement amongst us. It is sound groundwork as far as it extends; an excellent basis for reconciliation ultimately, and for progress towards reconciliation immediately.

But from this basis we diverge at present into two paths or byways; in simple language, we have come to a point where we have lost our highway. Some of us now turn to what may be called the vital road, others to the chemical, or to the physical, in which vital and chemical are either correlated or considered as identical.

The vital, including, of course, the germ theory of disease, was thus led up to, and what the exponents of this theory affirmed, and where they failed to convince, formed a distinct chapter.

The Vital or Germ Theory.—The vital or germ theory of disease—a very old theory, by the way—starts unmistakeably, however much its advocates may dispute the position, on an analogy—the analogy of the process of growth and development of plants and animals. It has for this reason a deep root in the imagination—a root which would for a long season hold it up a living assumption, even were it proved stark dead. The theory, in brief, is that the diseases we have called communicable have their origin in germs, which germs possess the inherent property of reproduction, and which are, in fact, veritably, of plant or animal growth. Within the body these germs, it is believed, reproduce themselves, and by and in the act excite the phenomena of disease. Out of the body they exist, floating in air, commingled with dust, adherent to solid substances, such as clothing or materials of buildings, or suspended in water, in which they are movable, but not soluble. Owing to their vitality they are, it is urged, indestructible under the ordinary conditions of cold and heat, moisture and dryness; hence, unseen as they are after the most rigorous research, they still are present, and are ready, being received into the body, to increase and multiply.

The original ideal of the germ theory is stated in the above terms; but in the original the germs were all of one type and force. It soon became evident, however, that the germ theory of disease, in this its simple dress, did not answer all requirements, for as there were many

diseases supposed to be due to germs, so it was necessary that each disease should have its specific germ. Here, again, the argument from analogy led the way. If each plant must have its specific seed or germ, and each animal the same, so small-pox and so scarlet fever must have their specific germs. By this line of reasoning, which Dr. Grove so ably treated upon some twenty years ago, men were led to look directly for the specific germs of specific diseases, and at length the attempt has been made to indicate the existence of germs which possess actual and determinable specific properties, so that each disease may have its own germ. Still more, these germs, it is assumed, are to be traced to vegetable parasitic origin; and, further, they are represented as susceptible of development into other recognised organisms. Lastly, the germs and the developments from them have been connected, in order to complete the theory of their relation to certain diseases as causes of the diseases, with a process of fermentation, with what is called zymosis of disease, or with a process of putrefaction of organic substances; the argument being, no germ no zymotic, no putrefactive disorder in the animal, living or dead.

The salient features of the germ theory thus epitomised, the author discussed it on its own evidence, and in its relations to the phenomena of disease. He insisted that, before we could admit it, whatever our prejudices for or against analogy may be, we must have some satisfaction that it is consistently true, and in accord with the phenomena with which it is assumed to be connected. If a shepherd take us into a field and show us a ring on the grass like that which would be produced by the dancing of human feet, we need not be surprised that the shepherd should tell us the ring was produced by such means, granting that he knew the fact of certain evidence; but if he tell us that no human feet have ever been known dancing in that ring, and therefore it must have been the result of motion of invisible feet—feet of beings which he calls fairies—we need not disbelieve the man, but we are bound to ask him a few questions before we do believe him. We ask him whether he has seen the fairies, and has positively distinguished them as differing from mortals; we ask him whether they sprang out of the ground or descended upon it; we ask him whether they have weight and other physical qualities to produce the ring; and we inquire whether the phenomenon we see bears evidence of the truth of what he tells us. These questions unanswered, the theory he has formed, beautiful—nay, gracefully poetical—though it may be, and not improbable by the clue of analogy, cannot, with all its fascinations, be received. The advocate of the germ theory of disease, reasoning from an analogy primitively the same in mode of thought as the shepherd who reasons as to the origin of fairy rings, must also answer difficulties altogether apart from the analogy, or not be received as a correct interpreter of nature.

We see before us a phenomenon which we call a disease—smallpox, scarlet fever, or other similar disease. We ask from whence it comes, and are told from a germ. We ask, what is a germ, and are told it is a living organism, capable of reproduction, and in its existence passing through various stages and activities; it is a ferment plant, possessing the power of exciting fermentative changes in the human body, and the disease is the sign of the fermentation; or it is a spheroidal particle,

a "micrococcus," much more delicate and minute at first than a ferment plant; it is the spore of a fungus, which put into a soil rich in nitrogen, multiplies by division, and becomes "the cause of all putrefaction" and diseases bearing the signs of putrefaction. We are left at sea at once by these expositions; the phenomenon of disease is clear, it shall be the phenomenon of scarlet fever. Is that then a disease of fermentation or of putrefaction? Say the former, fermentation; is that then a new process in the afflicted body? We know that before the fever existed there was already a natural zymosis in the body; fermentable matter and ferment pre-existent: is this new growth going on in the body exciting then a new kind of fermentation, and, if so, what kind? Or is it producing putrefaction, and, if so, where is the putrefaction? We watch the patient to recovery or to death, and see no definite sign either of new fermentation or of putrefaction.

The germs, whichever development they take, admit, it is said, of reproduction in favouring soil, which favouring soil they find in every fluid of the body. We inquire, thereupon, if they are to be found in the diseases under consideration in all parts favourable, and we find they are not. They follow specificity. But why are they not universal, and pervading specially the blood? They are under no control of the body, they are minute enough to move everywhere, they have their own independent life and reproduction, yet they are special in locality.

The germs are compared, in respect to their action, with some well-known active transforming agents. Dr. Sanderson compares their action to that induced by pepsine on albuminous food. This comparison of the action of pepsine and of the poisons which induce communicable disease may be allowed as an excellent comparison, rightly construed; but pepsine is a product of animal secretion, is a dependent substance; and when bodies which are independent, vital, reproductive organisms are compared with pepsine, the vital germ theory is half exploded by one of its own engineers.

It was explained, in opening the paper, that medical men hold certain ground in common, and are peculiarly unanimous in respect to the diseases which are communicable up to a given point. But from this point of agreement the logic of the germ theorists leads them naturally away from the modern school of thought, back to the ante-mediæval, if not beyond the Deluge; for as it is affirmed that these germs are entities, so the products—the diseases—must also be entities. Thus, either some certain diseases are entities while other diseases are not, or all diseases are entities—by far the most likely in the germ theory; and we go back straight to the entity doctrine of disease. If a spheroidal particle, capable of reproduction, can enter the body, reproduce there, raise the animal temperature, excite the brain into delirium, produce eruption, and so specifically develop phenomena that the specific disease is as clearly traceable to the germ of the disease as the child is traceable to the parent, the dog to the dog, or the plant to the plant, why is not every disease voluntarily traceable, and why is not every disease, so distinctly a phenomenon of its own sort, to be considered as it once was—an entity springing from an entity? In other words, is not a new life implanted with the implantation of an independent self-productive germ? We may speculate, indeed, on the premises of the

germ theory, without any laxity of reason, into the extremest conjecture, since we cannot give to a primary living self-productive being a secondary position in any train of phenomena that spring directly of it and from it. If one says a multiplying germ is the cause of the heat of a fever, another may urge with equal reason that it is the cause of the cold, or of the wandering of the mind, or of the convulsion, or of the paralysis. The disease is an entity, and the symptoms are its peculiar expressions by which it is known to be alive and active, and by which it is also known to be a member of a recognised family or race of entities of a common stock. We might, in short, most properly name diseases after their stock, as we name races or families of mankind.

By the same rule, we might find it absolutely necessary to change all our present method of conversation respecting diseases. A patient, instead of summoning us to his aid, because he was afraid of the outbreak of what now he would call cholera, might send for us because he feared a horde of micrococci had entered his house, and taken possession of his family; or physicians themselves might dispute in the consulting-room on the question whether an invading living force they were requested to operate against was composed of micrococci, cryptococci, or arthrococci.

To sustain the theory, it is assumed that the germs of disease retain their vitality beyond what occurs in other and higher forms of life. To what heat, to what cold, they may be subjected and live is untold, and how long they may lie inactive is untold. To this possible persistency of life itself there may be no objection, but it nevertheless suggests difficulty. For if germs be ready to reproduce, under favourable conditions, with the rapidity of reproduction assigned to them, and possess such persistency of life, it is hard to see why there should not be an increase of them, from which there could be no escape for man or animal, and by which, in time, the world would be depopulated. But history, so far from sustaining the idea of this possible catastrophe, denies it flatly. Some diseases of the epidemic class have died out altogether in places where they were most extensive. Where are the germs of those diseases—of black death, plague, sweating sickness, dancing mania? If the ague of London, the treatment of which gave fortunes to Sydenham and his contemporaries, depended on germs, where are the germs now? Can improved sanitary conditions have any effect in destroying living reproductive germs, which can resist the common causes of death and dissolution—nay, which can live through certain developments and back again to the primary? *In limine* the germ theory is wanting in evidence, even in respect to its own merits as a theory: it still rests on analogical evidence, which, as Campbell well expresses, is a defensive, not an offensive weapon in argument.

The theory, Dr. Richardson added, fails again, when it is tried, in accounting for certain of the most consistent and well-marked phenomena of the communicable diseases. If the theory were true, that fluid which is circulating to and through the minutest parts of the body—the blood—should, in the affected body, be charged with germs or their developments from the earliest stages of the malady. If the theory were true, there should be no localisation of infected fluids, whereas

each disease is marked by local as distinct from general distribution. If the theory were true, the body, infected with organisms which, so long as they find a soil, are reproducible, should have no chance of recovery; for what is to prevent the continuance of the process of reproduction? But the facts are that the majority of persons suffering from communicable diseases recover.

Again, the theory fails utterly to explain some of the best-observed facts, in relation to the course and fatality of the spreading diseases. It does not account for the fact that certain great epidemic diseases, such as scarlet fever, erysipelas, surgical fever, and puerperal fever, are most pronounced in the last quarter of each year, and least in the second quarter. It does not tell us why epidemics of the same communicable disease are attended at one time with low, at other times with high mortality. It does not explain the influence of age; why, in the case of the most communicable of diseases, scarlet fever, the prevalence of the disease is most distinctively marked from the fifth to the tenth year, with rapidly lessening liability after the tenth year. One can readily imagine that minds concentrated on what they conceive to be a grand generalisation may consider these difficulties founded on rigid facts as trifles; but to minds untrammelled by theory, and accustomed to look at the diseases, these trifles suggest difficulties which cast doubt on the generalisation altogether, and make it small as any of the trifles. Once more, the germ theory gives us no reading whatever of the nervous symptoms which attend and precede the other symptoms in cases of acute epidemic diseases, and it fails altogether to account for the immunity from recurrence of the communicable diseases—such as scarlet fever and smallpox—by virtue of a previous attack. Why cannot living persistent organisms, which ever reproduce themselves in suitable soil, reoccupy the same soil, and live and reproduce there again? Can they not enter the body a second time, or, entering it, cannot they reassert their activity? Can a man be charged with germs of smallpox or scarlet fever and remain unaffected by them? If so, why? He may, we know as a matter of fact, be proof against both diseases; but the fact is as proof against the germ theory as the man is against the germ.

The following is an epitome of the views advanced by Dr. Richardson on the “physical theory” of the origin of the communicable diseases:—

Dr. Richardson commenced this part of his subject by stating that the advocates of a physical theory accept the existence of organic poisons as the causes of the communicable diseases with the same confidence as do the advocates of the germ theory. Moreover, they are anxious to receive every physical fact which comes within experiment. The observation made by Dr. Sanderson, for example, that the part of the matter of cow-pox which constitutes the virus is a colloidal substance; and the observation made by Chauveau, and repeated by Sanderson, that the virus of small-pox matter contains two sets of particles, and that one of these is the true virus, are observations to be accepted as all-important. They are, in their way, as important as the discovery in therapeutics that quinine is an alkaloid and is the active agent of chinchona. But the physical theory branches from the vital, in

that it does not give to the virus—whatever that may be—the power or property of producing disease by a system of reproductive independent growth of the virus itself within the animal. On the contrary, it places the reproductive force in the animal itself—a continuation of force that is already existing. It does not dispute that the poisons assume the solid form, and are carried distances on solid substances, or by water, or on the air, but it puts them within the same circle of changes as other organic substances, and declares their perfect destructibility. Take, in illustration, one experiment:—

The distinguished Fordyce last century tried, with much care, the effect of dilution with water of the virus of small-pox. Up to a given dilution he found the virus active, but at a given dilution he found it inert. He found also that if the virus were active at all, it was as effectively so when it was diluted as when it was undiluted. This experiment has recently been repeated by Chauveau, and confirmed. It may be accepted as a fact. The reasoning from it, however, is different: the vital theory claims that the germs or infecting microzymes are mechanically distributed, so that they are not introduced with certainty into the body by inoculation. The physical theory would claim mechanical distribution of the poisonous particles; but it would assume also their molecular disintegration by the water. Thus, the author found that, after diluting snake poison largely with water, not only was the power to infect destroyed, but evaporation of the water and re-concentration did not suffice to bring back the poisonous quality to the matter.

Standing by the physical theory of the poisons of the communicable diseases, Dr. Richardson looks upon the poisons, not as inorganic mere chemical poisons, but as organic products—particles derived from, or rather belonging to, the secretions or secreted fluids of the animal body. Thus, a person suffering from a communicable disease is poisonous precisely as a cobra di capello is poisonous—that is to say, he is producing by secretion an organic poison, which, if it come into contact in the right way with a healthy person, will reproduce disease. In contagious ophthalmia, for instance, the poison is in the secretion on the conjunctiva; in yellow fever, in the biliary secretion; in cholera, in the secretion of the alimentary canal.

The author next proceeded to explain that the physical theory was consistent with the phenomena of the spreading diseases. No point has been more discussed than the origin of the organic poisons. The vital theorist has tried to trace these poisons to vegetable germs; the chemist, to inorganic substances. The physical view treats abstractedly with neither; it treats simply with change in the particles of the common secretions of the body, as they are passing through an abnormal phase. This change in the constitution of the secretions is due to the operation of two distinct series of causes.

In one set of cases, the change in the secretion is induced by the actual contact of poisonous matter with the secretion. The poisonous matter may be brought into such contact either by direct local conveyance to the secretion or by diffusion into it from the blood. By either of those processes the action set up in the secreted fluid is not a physical reproduction of the very identical portion of poisonous matter

originally introduced, but a change by contact, which, once established, extends through the secretion. The secretion, as it is poured out, is thus transformed into a substance the same as that which excited the action; and the process once started, continues to one of two results. The morbid secretion may be carried away, and be replaced by new and healthy secretion, whereupon there is recovery; or the secretion, not being carried away, may be absorbed into the blood by the incoming current, to excite changes there also, leading to disorganisation of the blood, and death.

In the second set of cases, there is no original poison introduced, but the secretions themselves, under process of organic decomposition from atmospheric peculiarity, aided or not by susceptibility to change, from the tendencies of the person affected, are rendered poisonous; upon which effects follow precisely as though the poison had been introduced into the body. After illustrating these points from some experiments on pyæmia, the author added that the physical theory thus accounts for the primary development of the organic poisons. The hypothesis, based on a vital ideal, obliges its supporters either to oppose the most obvious truths as to the direct or immediate origin of disease in the body, or to accept the belief of spontaneous generation of life; for as, according to the vital view, there must have been a first germ, so in every case of communicable disease there must have been a previous germ; and we must go back until we are obliged to beg the question altogether, and say it is impossible to arrive at final causes.

The physical theory breaks away from this vital ideal. The theory has nothing to do with the origin of life. The position is simply this: here is a secretion thrown out by the living organism; can it, by being brought into contact with poisonous secretion, or by being subjected to external influences, capable of changing its composition, become physically poisonous? The theory answers the question, and brings forward both experiment and experience in proof. It changes the *venue* from an unnatural to a natural position. It says these diseases are not the result of physiological actions new altogether in essence, but are the result simply of perverted natural acts. The explanation of the perversion, as supported by the theory, is also simple. It says—here is a secretion which is being constantly thrown out from the blood by the force of the circulation, as pepsine is. To-day this fluid is natural, and causes no injury locally or generally. But there is introduced into the secretion, or there is generated in it, a poisonous product, which, at a given time, can transform it from a healthy into a poisonous state. The change thus set up, every fresh grain of secretion thrown out upon the infected surface is subjected to the same action of poison, unless, at first, the secretion be sufficiently rapid to bear the poison away, or unless in process of time the secretion be free enough to carry the poison away without destroying life; and so the poison increases, the continuous force of the circulation itself sustaining the progression, and the force of secretion becoming, in fact, the force of reproduction.

The author believes it even possible that the body, while alive, and while *supposed to be healthy*, may actually produce a poison which, coming in contact with susceptible secretion, may set up disease. Thus, in the latter part of 1865 and beginning of 1867, Dr. Huntley, of

Jarrow-on-Tyne, was so unfortunate, despite every precaution, as to communicate puerperal fever to no less than sixteen ladies. By a process of reasoning which does as much honour to Dr. Huntley's manly honesty as to his logic, he proves that there could only have been one source of this poison—"the perspiration of his own hand."

Introduced, not by the systemic method, but either by direct local contact with the secretion or by direct development in the secretion, the poison may be essentially local in its action, and may establish nothing more than a local disease, producing irritation of the surface on which it appears. So much fluid may thus be thrown off that the poison itself shall be borne away, and by such elimination recovery may take place; but there is sometimes danger even in these cases—first, that the secretion, being poured profusely into organs essential to life, such as the trachea, shall obstruct natural function essential to life; secondly, that the secretion, when it is derived from a large surface, shall destroy by exhaustion; and thirdly, that from injury of the secreting surface there shall be absorption of poison. In cholera the danger at first consists in elimination. During the true choleraic stage there is no evidence of absorption into the blood, and the patient may die simply because the blood is drained of water. But after recovery from the eliminative stage, there is often an ingoing poisonous current, and then follows the well-known consecutive fever, typhoid, the wounded absorbing surface being in this case the alimentary canal.

In some parts of the body the introduction or formation of the poisonous agent is almost necessarily fatal, for the mechanical reason that the eliminated matter cannot find its exit. Thus, pyæmic poison introduced into a serous cavity of an animal always proves fatal, because there is no escape for the exudation; while on an open wound recovery will not unfrequently take place, if the exudation be free and if it be allowed ready exit.

If in the case of all the communicable diseases the argument were followed, then it would support that in every instance the disease is first local, and that the intensity of the disease and its danger depend on the secondary absorption, and on the continuance of the local derangement of secretion into the plasma, from which the secretions are derived.

Dr. Richardson next maintained that the physical theory explains the specific character of each poison. Whatever, he said, may be the mode of entrance of the poison, whether by the blood or by direct contact with a secretion, the order of progress is that the poison, if it act at all, acts exclusively and according to its nature—that is to say, by election on one secretion, which from that time will become the centre and the source of the subsequent danger.

It is by this means the specific properties of poisons are illustrated. It is for this reason that the poison of pyæmia will not produce small-pox, and the converse. It is for the reasons that have been assigned that, in some of the cases of communicable disease, the symptoms manifested are local only, and therefore comparatively light, while, in other cases, they become general under the influence of the ingoing current of a poisonous secretion.

As each of the secretions in its natural state possesses specific pro-

perties, so each one of them, in its diseased condition, acts as a specific poison; and, as each one has a specific local position in the body, so each one, when acting as a poison, excites special local symptoms, by which, usually, the disease presented is summarily defined in our nosologies. The communicable diseases may, in truth, be closely enumerated by the secretions.

Again, the author contended that the physical theory accounts naturally, not only for the reproduction, but for the limitation of the poisons.

If it be the fact that the particles of a secretion or fluid of the animal body may become poisonous, the reproduction of the poison during the life of the animal producing it and the dissemination of it must follow. But this view restrains the dissemination of the poison to the life of the affected animal; and it accepts that the eliminated poison product, unless it be carefully preserved, is open to the common forces of destruction outside the body. These limitations are true. The dead are not contagious like the living; and epidemics cease temporarily, or even permanently, as their poisons are resolved into elementary forms of matter.

Once more: the theory accords with certain striking pathological facts, which are considered broadly as *constitutional*, rather than general. There is, that is to say, such a thing as physiological tendency to special disease, which is explainable as due to physiological peculiarity of secretion, and possibly to nervous influence over secretion. One disease is strikingly illustrative of this fact—and most important is the lesson it teaches—viz., diphtheria. In a certain household five members, living under precisely the same conditions, were attacked with common cold. In one the secretions of the throat and nose underwent sudden change; there was absorption of a poisonous secretion; diphtheritic asthenia was set up, and there was rapid death; while in all the other cases there was no more than catarrh. Upon what depends such difference? Not on the air; that was the same to all. Not on food; that was the same. Not on anything that can be touched, until we come to difference of secreted fluid, which in one case rapidly underwent change and transformation into a poison, and in the other cases remained unchanged.

On this very same principle the theory offers a reasonable explanation of the comparative immunity, or comparative greater risk, of different persons at different ages, while it gives the best reason adducible for the fact of non-recurrence of the same disease in the same person on the ground of elimination of a secretion charged with particles susceptible of change.

The theory well accords with the facts relating to season: it is natural in seasons when there is excess of moisture in the air and coldness, when the animal fluids are eliminated slowly, when particles of organic matter find a ready vehicle for their transmission—water vapour—and when local chemical changes are most active from the presence of water, it is natural then that changes in secreted fluids will be most active.

Lastly, the theory accords with the phenomena or symptoms of the diseases. As every secreted fluid in the body is separated under special nervous influence, so an interference with a secretion on a secreting

surface will first make itself felt in disturbance of nervous function. The febrile condition following upon the introduction or development of poisonous fluid is equally well followed on this as on the opposing theory, while the local complications of the various diseases which form a part of the disease is traced by the physical theory, with a precision as perfect as a confessed theory can be expected or asked to supply.

Such is the physical theory as Dr. Richardson put it for discussion by the side of the vital. If it be urged, he said, that we have no proof of the nature of the assumed physical change by which a natural is turned into an unnatural substance—a poison—the answer is that the evidence, even on this, is better than any evidence bearing on the same question from the vital side. In the study of change of colloidal bodies by contact; in the study of the action of the different oxygens on animal fluids; in the study of the action of known organic chemical compounds, such as nitrite of amyl, we find ample suggestion for the strictest experimental research promising direct discovery on the organic poisons derived from animal bodies.

In conclusion, Dr. Richardson said his great object had been to show that the germ theory of the origin of the communicable diseases was not to be accepted in one eager grasp as the absolute truth. Nay, that, beautiful as it was from analogy, and grand as it was as a generalization, *if it were true*, it may after all be mere illusion, so that in time the wonder shall be—not for the theory, but for those who have sweltered to prove it, and have proved it—vanity.

ART. 2.—*On Putrefaction, Fermentation, and Infection.*

By ERNEST SANSOM, M.D.

(*The Lancet*, November 12.)

At a meeting of the Medical Society of London, on November 7, Dr. Sansom read a paper on the above subject. He maintained—1. That putrefaction and fermentation are each due to the influence of living, growing, and multiplying material. (*a*) Fermentation is the result of the vital acts of particles of vegetable protoplasm in an organic fluid of uniform composition, the particles assuming distinct morphological forms according to the nature of the fluid. (*b*) Putrefaction is due to like influences exerted upon organic matter of a more complex or a mixed kind. 2. The atmosphere contains minute spores, ova, and particles of protoplasm, which it wafts from place to place. These are, for the most part, perfectly harmless. 3. The diseases of infection are due to minute particles of living protoplasm, which are transmitted by physical intermedia; are capable of reproduction within the recipient organism, and are excreted in vastly increased numbers. 4. Infecting molecules present the complex reactions of living beings, and though they resist certain physical influences, they are destructible by others. Slight chemical or physical disturbances may destroy them. 5. Fermentation and infection are alike due to living molecules; but though it is possible that in some cases (cholera, typhoid,) the molecules of

fermentation in complex conditions can induce infection, it is far from proved that all the diseases of infection are due to the organisms of fermentation.

ART. 3.—*On the Microscopical Appearances of Cancer.*

By ROBERT HAMILTON, F.R.C.S.

(*Liverpool Medical and Surgical Reports*, October.)

At a meeting of the Microscopical Section of the Liverpool Medical Institution, Mr. Hamilton read a paper "On the Microscopical Appearances of Cancer." He alluded to the difficulty of ascertaining the causes of cancer, and proceeded to describe the various forms of the disease, giving the views of Arnott, Beale, and other pathologists.

He maintained that there were no typical cancer cells, the discovery of which would at once enable the observer to assert that the mass from which they were removed was malignant; but that there was a certain combination of appearances to be found, in sections taken from hard, solid, malignant growths, which were peculiar to them, and to malignant growths only; these were, a fibrous stroma with interspaces, of an ovoid shape, in which were a number of cells of large size, filled with granules; whilst in the soft ulcerative forms of cancer, such as cancer of the uterus or of the pharynx, there were no distinguishing characters to enable one at once to pronounce upon the nature of the disease. The peculiar appearances presented by hard cancerous growths would, he believed, be more generally recognised, if the section of the cancerous mass were obtained from the living subject, and examined immediately after removal. If it is not possible to examine the specimen at once, it should, without delay, be immersed in some preservative fluid. The best is glycerine diluted with water.

The specimens illustrating the paper were, cancer of the tongue, larynx, œsophagus, liver, peritonæum, mamma, uterus, testicle, &c.

ART. 4.—*Microscopical Characters of the Blood in Relapsing Fever.*

By H. C. HAND, M.D.

(*New York Medical Journal*, August.)

Dr. Hand has stated the condition of the blood in thirty cases of relapsing fever, in the Philadelphia Hospital. He notes a granular condition of the red corpuscles, as if the colouring matter were breaking up its uniform distribution, and becoming collected in patches. This granulation is often most marked round the circumference of the corpuscles, giving them the appearance of crenation. Crenation also is observed, both in connexion with the granular condition, and independently of it, in various degrees, from mere waviness of edge to complete deformity. Another change is increase of the white corpuscles. Dr. Cormack and Prof. Allen Thomson, in 1843, made this observation.

Dr. Hand says that he found the white corpuscles increased in only three of his cases; but the red corpuscles in their granular condition bear a resemblance to the white, and may be mistaken for them. The alteration in the blood occurs very early. The author relates a case in which the blood was examined within three or four hours of the first seizure, and found to be in an average state of degeneration. The case proved a typical one of relapsing fever. The author believes that by living in a contaminated atmosphere the blood may become changed without the fever necessarily following.

This was noted in the case of four of the resident medical attendants of the hospital. Once developed, the characters of the blood are constant, abating but slightly in the remissions. The abnormalities do not disappear for some time after the subsidence of the last relapse, when only debility and anæmia remain. The coagulability of the blood seems but little impaired. "Chicken-fat clots" are quite common in the post-mortem examinations; and in most cases the tendency of the red corpuscles to form rouleaus has been decided.

ART. 5.—*On the Nature and Origin of Paludal Miasms.**

By M. BALÆSTRA.

(*Archives Générales de Médecine*, Septembre.)

In examining the water of the Pontine Marshes, M. Balæstra found that it was filled with different species of infusoria, according to its state of corruption. Among these beings was constantly observed a small plant, the presence of which could be readily made out in the putrid water. This was a granular microphyte, belonging to the algæ, of a special and constant form, recalling somewhat that of the cactus peruvianus. This was always mixed with a considerable quantity of small spores, of $\frac{1}{1000}$ th of a millimetre in diameter, yellowish-green in colour and transparent; and also vesicles containing these spores, which presented very characteristic forms.

In examining the air of Rome and its surrounding parts, M. Balæstra found similar spores in varying proportions, according to the period and the season; they were much more abundant at the end of August, and especially when the investigation was made on a day following the end of a rain.

M. Balæstra, from the numerous observations he made, has been led to consider that the miasmatic principle of paludal places resides either in the spores themselves, or in some poisonous principles which they contain. The microphyte which produces these spores is not developed in dry seasons, but it may be developed after slight rain falling in a dry season and soon leaving the earth dry, or even by heavy dews and thick fogs which arise from the sea and ponds. The development of the microphyte results in the detachment and migration of spores. The author explains in this way the development of inter-

* Communicated to the Académie des Sciences.

mittent fever, which, slight in severity or temporarily suspended during a dry season, acquires at Rome great intensity during the months of August and September. That the endemic of paludal fever is not manifested in winter is due, according to M. Balæstra, less to the cold, which prevents the vegetation of the algæ by retarding the decomposition of organic substances, than to the abundance of rain which covers the places where the spores exist. Their dissemination in the air is favoured in a notable manner by the dryness of the soil on which they are seated. M. Balæstra explains by the action of the salts of quinine upon the spores, the powerful anti-miasmatic property of these medicinal agents.

ART. 6.—*On the Preservative Agency of Lowered Vitality.**

By J. MILNER FOTHERGILL, M.D.

(*Medical Times and Gazette*, August 20.)

Dr. Fothergill commenced by stating that health consists of a subtle balance of parts, both as to power and function, and then led on to that condition of impaired general health which accompanies irremediable injury or protracted repair in an important organ. He instanced the greater liability to sudden death in heart-disease, where the general health permitted a certain amount of exertion, through taxing the heart; the gloomy prognosis associated with the ravenous appetite of the consumptive, no portion of the food being digested; and the importance of a restricted animal-food diet in cases of chronic injury to the kidney. After stating a couple of cases illustrative of the theory, he proceeded to a general summary, and contrasted the system of treating maladies by improving the general health, or "levelling up," with the "levelling down" of the system to the state of the implicated organ in irremediable injury or protracted repair. He regarded the maintenance of balance as the thing to be aimed at, as being the condition most favourable to the prolongation of the existence of the organism.

ART. 7.—*On Certain Circumstances which contribute to impede the Progress of Scientific Medicine and Surgery.**

By CAMPBELL BLACK, M.D.

(*Medical Times and Gazette*, August 20.)

The author divided his subject into—1st. Circumstances that refer to the practitioner of medicine; 2nd. Circumstances that refer to the public; and 3rd. Circumstances that refer to the peculiarity of the pursuit. Under the first division of his subject, Dr. Black descanted on the prejudicial directions in which certain forms of medical specialism

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-on-Tyne, August, 1870.

tend. He held that it was too much the fashion to introduce new names and new remedies without determining their comparative value, or any attempt at explaining the principles on which the administration of remedies ought to be based. He illustrated his remarks by an adverse criticism of gynecology, dermatology, and ophthalmology. Under the second head he referred to the influence of fashion on the conduct of some practitioners; many of whom, he contended, never formed comprehensive or elementary notions of disease or treatment, but servilely followed everything new that human vanity introduced, and a fickle public applauded. He reprehended the practice of hasty diagnosis for effect, as unworthy of any upright medical practitioner. In respect of popular credulity, he maintained that it was not absolutely the most illiterate, but those who affected considerable intelligence, that were more frequently the most ardent supporters of such hallucinations as homœopathy, allopathy, &c. Under the third portion of his subject he explained the several sources of fallacy which ought to be eliminated in estimating the value of remedies. He held that the natural history of disease ought to be more studied. He was not absolutely against the introduction of novelties, but held that medical science had reached a stage at which their introduction ought not to be empirical. At considerable length he discussed this part of his subject. The Section unanimously accorded Dr. Black a vote of thanks for his very suggestive paper.

ART. 8.—*Experimental Researches on Suppurative Inflammation, and the Passage of Leucocytes through the Vascular Walls.*

By M. PICOT.

(*Archives Générales de Médecine*, Avril, 1870.)

The following are the results of M. Picot's experiments:—

“For a time, varying according to the species of animal and the calibre of the examined vessels, nothing is changed; the blood currents proceed in the same manner as they do before, with a swiftness sensibly the same. Afterwards these currents slacken, and the vessels diminish in size; one may in the capillaries, where several red corpuscles pass abreast, readily distinguish the leucocytes, and observe the formation of the inert layer, or white space of Feltz. Soon afterwards the vessels are seen to dilate, and those furnished with muscular fibres to become moniliform. These phenomena take place in the course of from three to four hours in the frog, and from an hour and a half to two hours in mammalia.

“Soon afterwards the direction of the currents is changed, and this change takes place alternately in both ways, so as to present oscillations, the duration of which is a second or even less; this phenomenon I style *balancement*.

“One may then see for the rest of the experiment spherical points included in the intra-vascular spaces, very small at first ($0^m\ 0\cdot01$), afterwards increasing rapidly in size, and attaining the ordinary size of

leucocytes. These elements do not proceed from the corpuscles of the connective tissue; they spring up on the spot; and, in my experience, a great number of them manifest sarcodic or amœboid expansions.

“The circulation is then definitely arrested, more rapidly in the capillaries than in the large tubes, and the following appearances are presented:—

“The white corpuscles are situated along the walls, and, in the finest capillaries, they fill almost the whole of the vascular calibre. They soon lose their normal form and become ovoid or triangular, push forward pointed prolongations, and even move about in the vessels. I have seen these bodies in the capillaries, where clear spaces exist, move from the right wall to the left wall, and then return to their starting-point. Notwithstanding all these changes in form and position, I have never made out the issue of white corpuscles from the vessels, whether capillary or otherwise. I have likewise never seen stomata or any solutions of continuity in the walls.

“Then, six or seven hours after the commencement of these phenomena in frogs, and five or six hours in mammalia, one may notice along the vessels the formation of spherical points, which are small at first and afterwards increase in size. In the fine capillaries these elements show themselves, either at points where there are no intra-vascular leucocytes, or at points where these latter bodies do exist; but if the leucocytes present in the vessels be counted, it is seen that the number has not varied, and that, consequently, the elements placed along the walls cannot be those that were originally contained within the vessels. Moreover, the newly-formed leucocytes are not only presented to sight along the right and left walls of the vessels, but may also be seen in the walls themselves, so that the elements thus produced are apparently seated in the vessel itself. This error of interpretation will be avoided if one takes care to count the leucocytes originally existing in the blood-vessels, and if, moreover, one, by means of the micrometer, makes certain of the true horizontal plane which these bodies occupy. Some of the bodies, too, are so placed upon the walls of the vessels that they may be, at the same time, both within and without the tubes. By taking the above-mentioned precautions, one may make certain of their real position. In counting the intra-vascular leucocytes one may observe that their number has not varied, and so conclude that those which are formed in one or other of the situations above indicated have not proceeded from the vascular canal.

“There is thus formed about the vessels a considerable number of leucocytes, which are disposed in rows, and surround the same vessels in a ring up to the time when the intra-vascular spaces, in the middle of which one has been able to observe white elements during the whole period, become very granular and afterwards filled with leucocytes.

“According to my experiences, the theory of Virchow, on the production of pus by proliferation of the corpuscles of connective tissues, is not an expression of the truth; Cohnheim's theory on the passage of leucocytes through the vascular walls, is an error of interpretation due, in my opinion, to this authority not having counted the white intra-vascular elements, and assured himself of the real horizontal plane in which they were seated. One sees then that the formation of leucocytes

in suppuration of the peritoneum is a case of geneses, since these elements appear on the spot, of much smaller size than they subsequently are, and follow their phases of evolution without proceeding from any preceding anatomical element.

ART. 9.—*On Scarlet Fever and its Prevention.*

By GEORGE JOHNSON, M.D., F.R.C.P., Professor of Medicine in King's College ; Physician to King's College Hospital.

(*British Medical Journal*, November 19.)

Scarlet fever is a highly infectious disease. The symptoms are the result of a morbid poison, of whose nature we know nothing except what we learn by observing its operation upon the living body. During the progress of the disease the fever-poison is rapidly generated within the system and thrown off through various outlets into the surrounding air. This process of elimination, which, as regards the patient, is conservative, and, in fact, forms an essential part of the process of cure, is dangerous to his associates and attendants. The poison retained within the system is a source of danger and often a cause of death to the patient, while the poison thrown out of the body is injurious and destructive to others.

A sufferer from scarlet fever, for a period of about a month from the commencement of the disease, is continually throwing off from his body a material poison, which has the power of conveying the disease to others. The poison is chiefly contained in the discharges from the throat and nose, and in the scales which are thrown off from the skin. It is probable that a portion of the poison may pass off by the bowels, and another portion by the kidneys. That the inflammation of the kidneys, which not unfrequently complicates the disease, is the result of an effort to eliminate the poison and its products, can scarcely be doubted ; the epithelial desquamation within the uriniferous tubes being exactly analogous to the epidermic desquamation on the surface of the skin.

Now, taking these facts as the basis for our practice, let us consider what we have to do when a case of scarlet fever occurs in a private house or in a public institution. Our object is twofold ; first, to conduct the patient safely through the disease ; and, second, to prevent the extension of the disease to the other inmates. It is fortunate that these objects in no degree conflict with each other. We need not here discuss the expediency of removing some of the inmates from the infected house. That the house is sufficiently capacious to allow of the complete seclusion of the patient is the first requisite. He should be placed in a room as remote as possible from other inhabited rooms—better at the upper part of the house. The room must have an open fireplace, in which a fire should be kept burning night and day. This, with a carefully regulated opening of doors and windows, insures free ventilation of the room, which is wholesome alike for the patient and his nurse. The room should be cleared of all needless carpets, curtains, draperies, and articles of dress, which may form a nidus for the poison. If the nurse has been protected by a previous attack of the

disease, so much the better. A second attack in the same individual is quite exceptional. The nurse in attendance upon the patient should have the least possible communication with the other inmates. She should wear a glazed cotton dress, which can be readily washed and disinfected, or, if need be, burnt when the nursing is completed.

One of the main objects of preventive treatment is to disinfect the poisonous emanations from the body at the earliest possible period after their formation. A basin containing Condly's fluid, or carbolic acid, or chloride of lime, should be kept by the bed-side for the patient to spit into. The mouth and throat should be frequently gargled with diluted Condly's fluid. It is better, as Dr. William Budd suggests, that, in place of pocket-handkerchiefs, bits of clean rag should be used to wipe the mouth and nose, and that these when once used should be burnt. The discharges from the bowel and kidney are to be received on their very exit from the body into a vessel containing some disinfectant—carbolic acid, Condly's fluid, or a solution of sulphate of iron. All glasses, cups, or other vessels, used by or about the patients are to be carefully cleansed before being used by others. The hands of the nurse and medical attendant may be disinfected by washing them in diluted Condly's fluid, or more conveniently by the carbolic acid soap. The patient's bed and body-linen, immediately on its removal, should be immersed in boiling water, and subsequently in water containing carbolic acid. Even after this the laundress should be warned to take special precautions, and to wash this linen apart from the remainder of her week's wash. There is reason to believe that a neglect of these precautions has frequently led to the spread of the disease.

The main outlet for the scarlet fever poison is through the skin. The particles of epidermis which are thrown off more or less abundantly during the progress of the fever are most active agents in the spread of the disease. The skin eruption and the subsequent scaling, which form an essential part of the process of cure, are also the chief means by which the disease is conveyed to others.

It is essential for the patient's welfare that the eruption should be encouraged and not repressed. A warm bath once or twice a day, when the patient is not too ill to bear the fatigue, keeps the rash well out, favours the exit of the poison, prevents renal complication, and is usually most soothing and agreeable to the patient. After the bath, the whole surface of the body, including the scalp, in accordance with Dr. W. Budd's directions, may be anointed with camphorated olive oil. It is doubtful whether, as Dr. Budd believes, the camphor have any disinfectant property; but the oil allays the troublesome itching of the skin, and it may have the yet greater advantage of entangling the poisonous particles of epidermis, and so preventing their ready diffusion into the air.

The warm baths may be repeated night and morning until the process of desquamation has ceased; and, while the patient is in the bath, the skin may be well cleansed and disinfected with carbolic acid soap. It is a good and safe rule to act upon, that, until the process of cutaneous desquamation has entirely ceased, the patient should neither expose himself to cold, nor associate with other members of his family. When, in the early stage of the disease, the patient is too ill and feeble to bear

the bath, the outcoming of the rash may be promoted, and the favourable progress of the disease assisted, by a daily packing for an hour or more in a warm wet sheet covered by blankets.

Since the poisonous discharges and secretions find their way into the closets and drains, the emptying of slops from the sick-room should be followed by a liberal downpouring of carbolic acid or some other disinfectant. Care should be taken that there is no leakage from the drains, or escape of sewer-gases within the house.

When the disease is over, the bedding and clothing of the patient and his attendants, the floors, the walls, and the ceiling of the room, the surface of the furniture, and the interior of cupboards, drawers, and closets, must be thoroughly cleansed and disinfected. If the walls of the room be covered with paper, this should be entirely removed and burnt; the ceiling whitewashed; and the floor scrubbed with soap and water, and then with carbolic acid. After this, the room should be left for a time unoccupied, with a fire in the grate, and the doors and windows open.

These preventive measures are effectual in arresting the spread of scarlet fever amongst those who have space, money, intelligence, and the desire to save life.

ART. 10.—*Scarlet Fever.*

By ROBERT DRUITT, M.R.C.P., F.R.C.S.

(*Medical Times and Gazette*, October 22.)

In a very able address delivered at the Meeting of the Association of Medical Officers of Health, by Dr. Drutt, President of the Association, he said, in alluding to the prevalence of scarlet fever in the metropolis:—This is the season in which, according to the observations of our colleague, Dr. Ballard, it may be expected to show some sign of increase, after a partial diminution during the summer months. In the week ending Oct. 8th, the Registrar-General reported 192 deaths from this disease, being an increase of 21 over the preceding week, and the highest number registered since last December. In the quarter ending September 30, there were 1674 deaths, or 129·4 per week. I need not speak of the devastation and ruinous expense occasioned by the cases which are not fatal; nor yet of the difficulties in the path of the Medical Officer of Health who shall try to set limits to it. For an efficient wielding of sanitary measures, it is clear that we want a registration of disease, coupled with some provision for making the existence of the disease known immediately to the sanitary authority. This was laid down in the memorandum on the measures necessary for arresting the spread of scarlet fever, which our Association presented to the Registrar-General in November, 1869, and of which I may say that, comparing it with some other publications on the same subject, it has the virtues of not less modesty, and greater comprehensiveness. But what do we find in practice? The existence of scarlet fever in a house, instead of being made known, in the interests of public safety, is studiously concealed, from the fear of preventing customers from coming to the shop, and the

like. But not only so ; there is a system of concealing the disease under euphuistic names—such as “blood poisoning with rash,” or quinsy. The prevalence of contagious sore throat without rash is also a source of infection which may baffle anyone. But, at any rate, safety would be enhanced if the place and date of every case were made known to public authority, and the terror which arises from suspicion and concealment would be abated. It is clear that the infection of scarlet fever is propagated either (1) by the bodies of the sick, and by the clothes, apartments, &c., which are contaminated by them ; or (2) by some sources of mischief other than the immediate effluvia of the sick, such as fermenting heaps of impurities, receptacles of excretions, drains, and the like ; or (3) by both. As for the first part of the subject, we need not go into the principles of the disinfection of the discharges from the kidneys and bowels, the application of medicated oil to the skin, and the frequent baths, to assist in the exfoliation and disinfect what passes off, the disinfection of clothes and the like, which have been so well described in our own Memorandum, and so energetically enforced by Dr. Budd, of Bristol. One thing must tend to diminish our sense of security from these measures, and that is the fact that, at present, scarlet fever is raging at Bristol—where Dr. Budd’s directions are sure to be carried out by the very able health officer, Dr. Davies—having caused thirty-three deaths in the week ending Oct. 8th ; and that Dr. Budd speaks on the one hand of his success in preventing the spread of infection within houses, and yet declares that the prevalence of scarlet fever is very considerable in his city. But if the infection of an infectious disease proceeding from individual patients be annihilated, and yet the disease spreads, there is reasonable suspicion that there must surely be some source other than infected persons—some common and extrinsic source—to account for this. There may be some condition of earth and air unknown to us, and not a subject for discussion. But there are two possible sources which the practical sanitarian should take into account. I am one of those who believe scarlet fever to be emphatically a product of sewer gases. Whether those gases be, according to the very able and consistent theory some years since advocated by Dr. Budd, merely the vehicles of germs cast into the sewers, or whether they generate disease *de novo*, is not my purpose to inquire. Suffice it to say that, in my own experience, sore throats and sewer gases go together, and that in cases where scarlet fever has spread in houses, spite of well-devised and sufficient means of isolating and disinfecting the first patient, I believe I have sometimes found the common source of contamination to be in the breathing of sewer air or drinking of sewer water. One example I bring before you in this drawing of a rainwater pipe, with an open funnel-top, close to the window of a bedroom in which child after child was seized with scarlet fever. This is a common source of the introduction of sewer gases, and wastepipes in cisterns are others ; and whilst on this head let me say that I believe that, to disinfect a length of pipe and a length of sewer by carbolic acid, the element of quantity should be taken into account. The quantity of carbolic acid should be enough not only to taint, but to drench the whole of the canal. We may watch the effects of this acid on infusoria in a basin of putrid water, and may assure ourselves that these creatures are not killed till the acid is added in

sufficient force. Against the sewer origin of this fever, I know there has been advanced by our acute and experienced colleague, Dr. Buchanan, the argument that "sanitary" works—among which are emphatically ranked the eradication of cesspools, the erection of closets, and drainage by means of pipes—have not been found to check the prevalence of scarlet fever. The answer is, that those works and apparatus so constructed do not in reality preserve the population from sewer gases, but simply cause them to be administered in a diluted form. If we consider in any back street the number of persons who frequent the water-closet, the small amount of cleansing it receives, the occasional intermission of the water supply, and the fumes that arise from street gullies and ventilators, we shall see that sanitary works must be carried far deeper before they can be relied on as safeguards against so subtle an infection as that of scarlet fever. The ventilation of the sick room, too, requires more consideration than is sometimes given to it. In most houses there is a strong draught down the staircase, and through the bedrooms and, perchance, the water-closet. If the bedroom window be open and the wind blows into it, the air of that room is sure to be blown into the body of the house. Hence it is not enough to ventilate the bed-room. Care must be taken that the air of the house does not come through this room. A sheet should be hung outside the door, so that all the bed-room air may pass up the chimney, and not into the house. Lastly, on this subject, let me say, that it seems a popular necessity to have some disinfectant for rooms and bedding; something cheap, safe, effectual, and quick, so that the poor need not be deprived of the use of their room for more than a few hours. These properties, I believe, are to be found in the fumes of burning sulphur. And I prefer it myself to any other disinfectant for rooms and for bedding, and like articles that cannot be sent to the wash. It would be well worth while to establish periodic fumigations of the most crowded houses, and to drench drains, closets, and earth with carbolic acid; and to advocate, likewise, the oiling, staining, and hardening of floors, so that they may not be scrubbed, but may be cleansed with something of the turpentine kind; the abolition of fixed carpets in bedrooms; not to allow the sweepings of sick-room floors to be put in a dust-hole, but to have them burnt. These points may seem very minute, but it is evident that scarlet fever has its favourite seat in something round about us, and so subtle as to render no care nor scrutiny superfluous.

ART. 11.—*Bloodletting as a Remedy in Acute Scarlatinal Dropsy.*

By J. P. BRAMWELL, M.D., L.R.C.S.E., Perth, Visiting Surgeon, Perth Infirmary.

(*British Medical Journal*, July 9.)

Dr. Bramwell states that he has found nothing to be compared to bloodletting in the dropsy which follows scarlet fever; it is incom-

parably the best diuretic, and often turns the tide when all other means have failed. It is not intended, however, to assert that all cases of this kind require depletion, as not a few of the milder sort will do well if sharply purged and freely sweated; but there are many cases that altogether refuse to respond to such treatment, and diuretics even of a mild, unirritating character, such as digitalis with bitartrate or acetate of potass, do not better the patient's condition in the slightest degree.

As a general rule, local depletion, from two to six leeches over the loins, according to age, will answer every purpose; but should uræmic convulsions ensue, general bleeding will be found invaluable, both in arresting the fits and in restoring the secretion of urine. When the patient is over eight years of age, eight or ten ounces should be drawn, *or a decided effect will not be produced*. Chloroform may here also be used with much benefit *after* depletion.

ART. 12.—*On Scarlet Fever, with especial Reference to Pathology and Treatment.**

By R. RENFREW, M.D.

(*The Lancet*, August 20.)

Scarlet fever is one of the zymotic diseases. The zymotic diseases are produced by an organised substance entering the body, which has the power of multiplying itself. In multiplying itself the blood is disordered, the nervous system deranged, the circulation quickened, and the secretions and excretions are changed. The poisons of the zymotic disease are not thrown off by the usual eliminating organs, but each poison is eliminated by a particular part of the body—smallpox by the skin, cowpox at the point of introduction, enteric fever by the lower part of the ileum, scarlet fever by the fauces and nose. When the poisons are thrown off there is always irritation and inflammation. As the poison of scarlet fever is thrown off by the fauces and nose, a large portion must pass into the stomach to be reabsorbed, intensifying and prolonging the disease. The remedies given in scarlet fever should be those that will destroy the poison; moderate and assist physiological changes. To accomplish these ends a mixture of chlorate of potash and tincture of steel is given, which contains chlorine, muriatic acid, iron, and chlorate of potash. The chlorine destroys the poison; the acid supplies acid to the blood, which is in a subacid condition; the iron improves the red discs, which are in a black and melanosed condition; the chlorate of potash supplies oxygen, to assist in oxidising the disintegrated material that is floating in the blood.

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association at Newcastle-on-Tyne, August, 1870.

ART. 13.—*Case of Rötheln, or German Measles.*

By CHARLES MURCHISON, M.D., LL.D., F.R.S., Physician to the Middlesex Hospital, and Lecturer on the Practice of Medicine; Consulting Physician and Vice-President of the London Fever Hospital.

(*The Lancet*, October 29.)

In a clinical lecture delivered at Middlesex Hospital, Dr. Murchison related the case of a girl, at eighteen, admitted into the Middlesex Hospital April 14th, 1870, who had had an attack of measles at the age of four, and of scarlet fever at the age of six. On the morning of April 12th she had been quite well, and in the evening she had first complained of headache, loss of appetite, chilliness, and running from the eyes. During the following night she had been very restless and thirsty, and on the morning of the 13th she noticed an eruption on the face, which soon extended over the whole body. The throat from the first had been slightly sore, but there had been no sneezing nor cough.

On admission, the girl did not look very ill, but her face, chest, arms, legs, and entire body were covered with an eruption consisting of irregular patches, at many places running into one another so as to form a large red space, but at others quite isolated. The whole eruption presented very much the appearance of measles, but the patches were less crescentic in outline, and had nowhere a decidedly papular character. Skin dry; temperature 101° ; pulse 132. The patient sneezed several times within two or three hours of admission, and had a slight running from the nose, and a watery discharge from the eyes, but the conjunctivæ were not injected, and there was no cough nor bronchitic râles in the chest. The tongue was moist, coated with a thin white fur, and red at the edges, but there was no marked enlargement of the papillæ. The throat was still sore; the soft palate and fauces were vividly injected, and the follicles enlarged; both tonsils were large and red, but free from ulceration or membrane. An effervescing citrate of potash draught was prescribed. In the evening the temperature rose to 103.2° . The patient did not sleep well, and next morning (April 15th) she still complained of pain and dryness of the throat; she had frequent sneezing, and the eyes were still watery. The temperature was 101.4° , and pulse 128. No urine had been passed since admission. The appearance of the eruption was quite altered. Over the hands and arms it formed a continuous bright redness, like the eruption of scarlet fever; but over the front of the chest it had still a mottled character, although the patches ran into one another much more than on admission. On April 16th, or the fifth day of the attack, the patient was much better. The pulse was 100, and temperature 99° . She had slept well, and had no cough, sneezing, running from the eyes, nor sore-throat. The tongue was clean and red, and the appetite was returning. Urine abundant, alkaline, 1030; no albumen. The eruption had almost disappeared from the face, but was still abundant and more confluent on the trunk and extremities. On April 17th all sign of fever was

gone, but traces of the eruption were visible till the 19th. During convalescence there was abundant branny desquamation, but no albumen in the urine. On April 30th the patient left the hospital well.

On April 14th Dr. Murchison was called to see a young lady residing in the same house as Elizabeth R., who had been taken on the same day with similar symptoms, followed next morning by an eruption all over the body, which at the time of his visit presented precisely the same characters as those above described. This child's attack was milder even than that of Elizabeth R. The fever was very slight; and on April 16th the eruption had quite left the face, but was still visible on the legs. About ten or fourteen days subsequently, the second child in the same family had a similar attack.

The ailment from which these patients suffered is not generally recognised as a distinct disease; and cases of it, when they occur, are apt to be puzzling, and sometimes to get the medical attendant into trouble from his inability to determine their real nature. Yet, on the whole, they are not very rare. To explain the pathological relations of the disease, and also the reason of its being called "German measles," it is necessary to depart from the usual custom of a clinical lecture, and go into a little detail respecting the early history of measles and scarlet fever.

Measles and scarlet fever were long regarded as varieties of small-pox. Measles was first distinguished from variola by Abu Dschafar and other Arabian physicians in the twelfth century; but measles and scarlet fever continued to be looked upon as one disease, which was designated "morbilli." An Italian physician, Philip Ingrassias, of Palermo, in the middle of the sixteenth century, first described scarlet fever, which he called "rossalia," as distinct from the morbilli or measles. He pointed out that the rash of the former differed from that of the latter in being attended by little tumefaction, and in being diffuse like that of erysipelas, the whole skin looking as if it were on fire. He adds: "Nonnulli sunt qui *morbillos idem cum rossalia* existimant; nos autem sæpe distinctos esse affectus, nostrismet oculis, non aliorum duntaxat relationi confidentes, inspeximus." The term "scarlatina" is said to have been the vernacular name for the disease on the shores of the Levant, and was first adopted in a medical work by Prosper Martianus, another Italian physician; who, about the middle of the sixteenth century, also described the disease as distinct from morbilli. Epidemics of scarlet fever were first described in this country by Sydenham in 1676, and about the same time in Scotland by Sir Robert Sibbald, physician to Charles II., and in the middle of last century by Fothergill and Huxham. But, notwithstanding the accurate descriptions of these distinguished observers, scarlet fever and measles continued to be regarded by many physicians as mere varieties of one disease, the former being often styled "morbilli confluentes;" and the matter was only finally set at rest by Dr. William Withering in his classical essay published in 1779.*

Shortly before (1768), the two diseases had been separated by Sauvages in his *Nosology*, and he was the first to call measles "rubeola,"

* *An Account of the Scarlet Fever and Sore Throat.* London, 1779.

instead of "morbilli," by which name it had always been known before. This new name, "rubeola," was adopted by Cullen in his *Nosology*, published four years later (1772).

The disease which Dr. Murchison now brings under notice was separated from measles and scarlet fever at a still later date. It was first described by German physicians about the end of the last and the beginning of the present century, and particularly by Ziegler, Heim,* and Hildenbrand.† The last of these writers called the new disease "rubeola," and retained the name "morbilli" for measles proper; and this nomenclature has been adopted by many subsequent German writers, including Schönlein; whereas English writers, with the exception of Dr. Copland, have followed Cullen's nosology, and called ordinary measles "rubeola." Hence the rubeola of many German writers is not the rubeola of English nosologists, and when the new disease came to be recognised in England it was often designated "German rubeola or measles." There are, however, many other names by which it is known—such as rötheln, feüermasern, scarlatina morbillosa, morbilli scarlatinosi, rubeola notha, bastard measles or scarlatina, hybrid measles or scarlatina, &c.

In this country the disease has been well described by Dr. Robert Paterson, who observed it epidemic in Leith and its neighbourhood in 1840;‡ and by Dr. G. W. Balfour, who in 1857 had an opportunity of studying another epidemic of it in the vicinity of Edinburgh.§

The existence of the disease, however, is still far from being generally recognised. With the exception of Copland and Aitken, few systematic writers in this country even refer to it. There is no allusion to it in Watson's classical lectures, nor in the new nomenclature of the Royal College of Physicians. Tanner mentions it, but thinks it unnecessary to describe it; while in Reynolds's *System of Medicine* it is only alluded to as an error in diagnosis. Its existence as an independent disease is also doubted by many foreign physicians. Niemeyer, in his *Text-book of Practical Medicine*,|| speaks of cases of scarlet fever with a rash like measles (rubeola scarlatinosa) and of measles with a rash like scarlet fever (rubeola morbillosa), but regards them as mere modifications of measles or scarlet fever. Hebra also, in his great work on Diseases of the Skin, refuses to admit the specific distinctness of rötheln.¶ The result is that few practitioners are acquainted with the disease, and many have never heard of it; and it is usually treated as a variety of measles or scarlet fever, although every now and then a medical man of more than usual discernment describes it in the journals as a new or anomalous exanthem.

* Heim, in *Hufeland's Journal*, 1812.

† Hildenbrand, *Inst. Pract. Med.*, vol. iv. p. 412.

‡ R. Paterson: *An Account of the Rötheln of German Authors, with a few Observations on the Disease as it has been seen to prevail in Leith and its Neighbourhood.* (*Edin. Med. and Surg. Journ.*, April, 1840, p. 381.)

§ G. W. Balfour: *Notice of an Epidemic of Rötheln—Rubeola?* (*Edin. Med. Journ.*, 1856-57, p. 717.)

|| Vol. ii. p. 543, American Transl.

¶ *Syd. Soc. Ed.*, vol. i. pp. 166, 167, 299.

But whatever view we take of its pathology, the characters of the disease are sufficiently explicit, and deserve to be generally known. They may be briefly enumerated under the following heads:—

1. *Premonitory fever*, with pains in the limbs and sometimes in the back; sore-throat, with redness and swelling of the tonsils and fauces, coryza, sneezing, and catarrh of the respiratory passages. In all cases there is sore-throat; but the catarrh may be slight, or sometimes absent. Occasionally there is vomiting. Most authors fix the duration of this stage at about three days, the eruption being said to appear on the third or fourth day; but in Dr. Murchison's experience its duration has been sometimes much shorter, the rash appearing on the second day, or even within the first twenty-four hours.

2. *The rash* appears first on the breast and arms, but sometimes first on the face, and soon becomes universal. It consists of red elevated stigmata or dots, which run together into irregular patches, with obtuse blunt angles, something like those of measles; but, after a time, these patches usually coalesce, and the whole skin becomes uniformly red, as in scarlet fever. The eruption is copious, in a direct ratio to the severity of the general symptoms. It lasts longer, as a rule, than the rash of either measles or scarlet fever—from four to ten days. Its disappearance is followed by a desquamation of branny scales.

3. With the appearance of the rash the other symptoms are aggravated, and there is *a combination of scarlatinous angina and tongue with morbillous catarrh*. The throat is always sore, and the tonsils swollen and red; but the latter are rarely ulcerated. The swelling in the throat may be so great that the patient is unable to swallow; and occasionally, but not often, the glands in the neck suppurate. The tongue, which at first is white and coated, usually becomes after a few days clean and red, and the papillæ may be large and prominent, exactly as in the tongue of scarlet fever. But with all this there is more or less catarrh of the nasal and respiratory passages and coryza, and sometimes there is severe bronchitis, the suffering from which is greatly aggravated by the swelling in the throat. It is a mistake, therefore, to speak of rōtheln as identical with what has been called "*rubeola sine catarrho*."

4. *The disease can propagate itself*. Many writers, like Copland, regard rōtheln as a hybrid between measles and scarlet fever; and there are several circumstances which lend weight to this view—such as the fact that the disease presents the characters of both measles and scarlet fever combined, those of measles in one case, or of scarlet fever in another, or at different periods in the same case, being the more prominent; so that the two diseases are sometimes believed to occur simultaneously in the same house, or the one is thought to pass into the other in the same individual; or, again, the circumstance that rōtheln has often been observed when measles and scarlet fever have both been epidemic. It is not correct, however, to say, as Hebra does, that rōtheln occurs only in the sporadic form. Epidemics of it have been observed in Germany and Scotland.* But a curious and important fact is that, when the disease spreads, it does not propagate either measles or scarlet fever, as

* R. Paterson, *loc. cit.*, p. 386.

a hybrid of these two diseases might be expected to do, but a disease like itself. Of this Dr. Murchison has had good evidence on several occasions; and the cases which he has brought under notice furnish an additional illustration of the fact.

5. It has been a common observation by those who have paid attention to the subject, that *rötheln does not protect from either measles or scarlet fever, and that a previous attack of either of these diseases does not protect from it*. Both of the patients whose cases Dr. Murchison has described, had previously passed through attacks of scarlet fever and measles.

From these considerations it is obvious that *rötheln*, although partaking of the characters of both measles and scarlet fever, has some claim to be reckoned specifically distinct from both.

Prognosis.—The disease is in most instances mild, and a much more favourable prognosis may be formed than in true scarlet fever. Occasionally, however, the disease is severe or fatal, and in rare instances it is followed by dropsy.

The only *treatment* required in most cases is, that the patient should remain in bed, and take a mild aperient, followed by a saline diaphoretic mixture. Occasionally the guttural or catarrhal symptoms will require special treatment.

In the *Lancet* of November 12th, Dr. Kenyon, of Upper Norwood, states that he has lately had nine cases completely answering to Dr. Murchison's description, especially as to the character of the rash, duration of fever, &c., and embarrassment of diagnosis. In two or three only were the air-passages affected, but in five or six there was severe ulceration of the tonsils; and in one case, nearly fatal from exhaustion, there was discharge from ear and nose, and afterwards abscess in neck and ischio-rectal fossa. All recovered with supporting regimen, chlorine mixture, &c. Some of the children had already had measles, and some scarlatina, but Dr. Kenyon does not know that any had had both.

Mr. W. Norris Marshall, of Mere, Wilts, has recognised the disease in his own practice for six years. He also had it pointed out to him by the medical man with whom he first acted as assistant, eight years ago. His partner has been aware of this special malady for years.

ART. 14.—*On Abortive Typhoid Fever, or Typhoid Febricula.*

By Dr. A. LAVERAN.

(*Archives Générales de Médecine*, Avril, 1870.)

“There exists an abortive variety of typhoid fever, which has been described by Griesinger under the name of *typhus levissimus*, and by Lebert and Niemeyer under the name of abortive typhus; the names of abortive typhoid fever, or typhoid febricula, are more suitable. Very common in certain epidemics of typhoid fever typhoid febricula is also observed as a sporadic affection, but then is often unrecognised, and

described generally as a mucous or synochial fever. The duration of typhoid febricula is from six (and probably less), to eighteen days ; its mean duration is ten or eleven days. The diagnosis of typhoid febricula is possible, if not easy ; it is especially by relying upon the course of the temperature that one may succeed in separating the very numerous affections which may be confounded with it. In this variety of typhoid fever, Peyer's patches do not arrive at ulceration. Typhoid febricula is a natural variety of typhoid fever—that is to say, that the treatment counts for nothing in the short course of the affection.”

ART. 15.—*Critical Study of Typhoid Fever.*

By Dr. SOULIER.

(*Journal de Lyon ; Gazette Médicale de Paris*, No. 21, 1870.)

(a) The Galenic definition, *fever is unnatural heat*, gives only the physical character of the fever, which is chemically marked rather by a process of denutrition than by one of oxidation. *The febrile patient fails to be nourished instead of gaining heat.* The most direct cause of this process of denutrition seems to be the presence in the blood of a pyrogenic principle—virus, septic element, miasm, bio-ferment, bacteria, &c.—coming directly from without or cast into the circulatory system by the hæmatopoietic organs, principally the spleen, in which it is possible that the principle may be fixed and multiply.

(b) 1. Typhoid is a septicæmic fever ; it consists originally in an alteration of the blood by a contagium, the nature and origin of which have not yet been scientifically determined.

2. Typhoid fever differs specifically from exanthematic typhus. The two maladies may be associated in the same genus, but they cannot be considered as two varieties of the same morbid species.

3. The cases of Chomel, Andral, and Louis, which have been regarded as cases of typhoid fever without affections of Peyer's patches, cannot receive a like interpretation. Nevertheless, in the present state of science, it is not certain that the intestinal lesion is a *sine quâ non* of typhoid fever.

4. Typhoid fever consists essentially in a morbid change of the blood, and of the abdominal lymphatic system. The morbid change of the blood is a septic change—the abdominal lymphatic system is attacked by an inflammatory process rapidly proceeding to retrogression.

5. The extractive matters of the blood are in a much more considerable quantity in typhoid fever than in the normal condition. Their rôle from the pyretic and typhic points of view seems to be much more important than that of urea. The researches of M. Bouchardat have established the fact that it is not proved that urea is a product of oxidation ; according to the Professor it seems rather to be a product of disintegration, and according to M. Chalvet the accumulation of urea in the blood of a patient with typhoid fever, far from being hurtful, favours on the contrary the removal of the extractive matters by the urine. From this point of view it would be regarded as a precious diuretic.

6. Typhoid fever presents a special thermoscopic curve, which assists the diagnosis; and a great number of symptoms and lesions which it presents are produced directly by the great elevation of temperature characteristic of typhoid.

7. Sudden death in the convalescent period of even slight typhoid fever is not a rare occurrence; the cause of this is still unknown.

8. Abortive and ambulatory typhus are two forms of typhoid fever, which, with regard to practice and nosology, it is important to recognise.

9. The so-called mucous fever is a slight form of typhoid fever. The affection which has been described as catarrhal fever with a typhoid form is really a typhoid fever having a catarrhal form.

10. Expectation and symptomatic medication should constitute the essential basis of the treatment of typhoid fever. Alcoholic remedies, if they be not capable of doing much good, still seem to be harmless; they may even be anti-febrile agents. The use of tonics is indicated at all stages; alimentation ought not, however, to be excessive, even at a late stage of the fever. The indications for disinfection are even more urgent than those for giving tonics.

ART. 16.—*On Muscular Lesions observed in Small-pox.*

By M. QUINQUAD.

(*Archives Générales de Médecine*, Septembre, 1870.)

“The granulo-fatty degeneration of muscle that has been very well described by Zenker, Hayem, and others, is certainly manifested in certain forms of variola, generally in attacks of severe or hæmorrhagic variola.

“I have observed this change less frequently in severe confluent variola causing death between the tenth and the fifteenth days, or, at least, in these cases it is less marked.

“The change is characterised by an opaque granular condition of muscular fibrillæ; by the side of these may be observed others perfectly healthy.

“These primitive fibres are the seat of a great number of proteinic and fatty granules; they are altered either partially or in their totality. Some of them present a condition which I call elytroid, on account of their aspect resembling that of the elytra of hemipterous insects. This is a granular appearance which often exists when the striation is on the point of disappearing.

“The true proliferation of the myoclasts and of the cells of the interstitial tissue occurs less frequently, according to my observations, than has been indicated by Zenker.

“I have demonstrated that the first important phenomenon of every phlegmasia is the return of the elements to an embryonic condition; and that every inflammation is a kind of fecundation; whence it results that at a certain moment the elements are apt to undergo proliferation.

“What we see in these altered muscles is the return of pre-existing elements which were scarcely visible in the normal condition, in con-

sequence of certain special arrangements, but which have become so under the influence of the first stage of inflammation. The elements of the capillaries and the internal and external perimysium are very numerous in the normal condition; and here we have causes which would lead us to imagine a multiplication of elements.

"At the same time these fibrillæ present various physico-chemical changes.

"In many cases there was apparently a waxy alteration in the muscle, but on examining it closely, I was often able to see the striation. In consequence of inflammatory lesions the muscular substance is so much softened that the pressure of the glass may readily crush it; or again, this muscular material may acquire such optical properties, that certain reagents will give to it a vitreous appearance which it does not really possess."

ART. 17.—*On the Diagnosis, Prognosis, and Treatment of some of the Forms of Variola.**

By M. DESNOS.

(*Gazette Hebdomadaire*, No. 28, 1870.)

Having heard it stated by M. Bourdon that this physician had, thanks to a tonic plan of treatment, saved three-fourths and even four-fifths of his cases of confluent variola, M. Desnos, in consideration of opposite results in his own practice of the same method of treatment, inquired into the cause of this difference between the results. He now thinks that it was owing rather to a confusion of words than to a real difference in things. According to him the misunderstanding arose from the fact that with confluent variola there may be associated another very common form of variola, which he calls *la variole en corymbes*.

To distinguish these two forms of variola, so like in appearance, it is not necessary to consider the number and disposition of the pustules, but it is particularly important to note the form and the direction of the prodroma, the course of the fever, and the termination of the disease.

Confluent variola has most frequently, without this being absolutely special, more intense and prodromic symptoms than the other forms of variola; moreover—and this is a fundamental characteristic—the prodromic period is very short; as two days, or two days and a half. Sydenham, and afterwards Trousseau, recognised the importance of the brevity of prodromata with regard to the prognosis of the amount of confluence. M. Desnos has had frequent opportunities of proving the value of this remark.

The fever of confluent variola is not continued, as has been supposed, but it presents a defervescence of the initial fever, which is tardy, slowly produced, of short duration, and very rapidly replaced by the secondary fever. This progress of the fever, which has been de-

* Communicated to the Société Médicale des Hôpitaux.

monstrated by the thermometer, is very different from that observed in discrete variola, where the deservescence is often rapid and the apyrexia prolonged. The march and the termination of cases of confluent variola are almost invariably the same in all cases. Up to the eleventh or twelfth day the patient seems to be in no imminent danger, although there be violent fever, sore throat, and abundant salivation; at this period the salivation is arrested, most frequently the face, the hands and feet do not swell, and death occurs suddenly in the course of a few hours about the fourteenth, fifteenth, or sixteenth day during an accession of delirium or of suffocation, which to account for no lesion can be afterwards found. In some instances the patient dies asphyxiated by thick mucosities secreted in the buccal mucous membrane. Death may also take place at the seventh or eighth day from a profound granular-fatty degeneration of the heart. This muscular change, which has been already mentioned by a certain number of observers, and lately by M. Hayem, forms a terrible episode in the lesion of the muscular system—a lesion more or less generalised, which has been noticed in several acute and infectious maladies, and to which Zenker was the first to direct attention.

In confluent variola, it may be said that death is the rule, recovery the exception. This severe judgment was expressed by Trousseau, who considered cholera and yellow fever to be less formidable than variola.

M. Desnos cannot attribute his want of success to the treatment: every means recommended by authorities and by his colleagues was employed with the greatest care, and constant supervision, still without success.

Confluent variola, finally, presents this characteristic, that the pustules are so numerous, especially on the face, that they are confounded with each other without leaving intervals of healthy skin, and that they cause the epidermis to be detached in such masses as to form a greyish mask. In the variety of corymbose variola—*la variole en corymbes*—the eruption, though sometimes very abundant on the face, consists of patches varying in dimensions and forms, which are constituted by an accumulation of agglomerated pustules, but still isolated from neighbouring patches by a space of healthy skin—a space in which one may observe here and there solitary pustules similar to those seen in discrete variola. The march of the eruption also is very different from that of confluent variola; towards the eighth day the pustules burst, and are covered by yellow crusts quite different from the grey and black crusts of the confluent form.

The prodroma of corymbose variola is longer, and is accompanied by more profuse perspiration than that of confluent variola. Salivation during the eruption is most frequently absent. Finally, the fever, after having yielded on the development of the eruption, reappears towards the seventh day, to cease finally on the eleventh.

Although recognising that the corymbose form of variola is subject as much as the confluent form to accidents which may suddenly compromise the life of the patient, M. Desnos lays it down as a principle, that in the former affection, *la variole en corymbes*, recovery is the rule, and death the exception.

If this form of variola resemble at first sight the confluent form, it

differs in its march, its eruption, and its termination. One ought, then, to range it in the list of discrete variola, and to consider it there as a form of abundant discrete variola.

The confusion that has almost always existed between these two forms of variola, the issues of which are so different, explains the errors into which practitioners have fallen in dealing with the action of a new medicinal agent, and in judging the value of this by statistical records. It is for this reason that carbolic acid—so much recommended by M. Chauffard—has been so apparently efficacious in certain cases of variola.

The coherent or corymbose form of variola is an unfavourable affection for assisting the judgment as to the value of any remedy, for the patient gets well without intervention; and if no distinction be made between this and the confluent form of variola, one will be exposed to erroneous conclusions.

In conclusion, M. Desnos states that he has treated nineteen patients suffering from confluent variola by carbolic acid, according to indications given by M. Chauffard. Of this number four were cases of hæmorrhagic variola, all of which died. Setting aside these unfavourable cases, the carbolic acid still seems to have had no influence upon this severe form of the disease. Of the remaining fifteen cases of confluent variola, thirteen died, and two recovered.

ART. 18.—*On the part played by Microzoa and Microphytes in the Genesis, Evolution, and Propagation of Diseases.*

By Dr. F. DE RANSE.

(*Gazette Médicale de Paris*, No. 36, 1870.)

This article concludes with the following *résumé*:—

“Ferments are living beings.

“Fermentation is the result of the evolution and reproduction of these beings.

“Effluviæ, miasms, and viri are ferments—that is to say, beings, or the germs of living beings. After penetrating into the organism, these beings or germs are developed, reproduced, and multiplied therein, and thus become the origin of phenomena analogous to those of fermentation; whence results the disease.

“In assimilating effluviæ, miasms, and viri to ferments, the doctrine of animated pathology reproduces under another form the theory of Von Helmont, which made ferments preside over all vital acts.

“There exist several hypotheses concerning the nature and mode of action of ferments: the theory of catalysis (Berzelius, Robin); the mechanical theory (Liebig); the biological theory (Cagniard-Latour, Turpin, Schultze, Schwann); and the mixed theories (Pasteur, Berthelot, Bechamp, &c).

“According to one or other of these theories, there exist two classes of ferments; soluble ferments, and insoluble ferments; or a single class, which is composed exclusively either of insoluble ferments or of soluble ferments.

"The theory to which we give the preference is that of M. Bechamp. According to this, all ferments are soluble. The microzoa and microphytes do not act in fermentation by decomposing directly the fermentescible material. They transform it isomerically by a *zymasis* which they secrete. They are then nourished by this, and absorb it, assimilating what is necessary, rejecting what is useless. The products of this assimilation are rightly considered as the products of the decomposition of the fermentescible material.

"It may be said with truth, speaking generally, that each fermentation is produced, if not exclusively, at least specially, by a particular ferment.

"The origin of the organisms which are met with in fermentations has given rise to two doctrines—*panspermism* and *heterogeny*. The researches of M. Bechamp and others on molecular granules have modified the nature of the discussion by showing that the organized ferments are not always furnished by external media, but that they may also proceed directly from organized matter. These researches afford a powerful support to the now widely spread opinion which recognises and proclaims the independence and autonomy of anatomical elements.

"The partisans of the doctrine of animated pathology, adopting with regard to fermentation the pure biological theory of Turpin, have attempted, in order to demonstrate the assimilation which they establish between ferments on the one hand, and *effluviæ*, *miasms*, and *viri* on the other, to search for in these latter agents the presence of microscopical living things. This assimilation should be examined from the threefold point of view of the actual constitution of the agents, of their mode of action, and of the manner in which they act in the presence of certain reagents.

"The constitution of *effluviæ*, *miasms*, and *viri* is complex. One finds there soluble and insoluble bodies, corpuscles, granules, molecular granules, bacteria, &c. The insoluble bodies may be ova of microzoa, spores of microphytes, or anatomical elements. These last elements predominate in the contagious *miasms* emanated from diseased individuals, and in *viri*.

"This complexity in the constitution of *effluviæ*, *miasms*, and *viri* has, as a consequence, a correlative complexity in their modes of action and their effects.

"The soluble material which they include may be either inactive, or act sometimes as a poison at other times as a soluble ferment.

"The microzoa and microphytes may comport themselves as veritable parasites—that is to say, they may cause all the bad symptoms by their presence and development, or they may rather act by the material which they secrete, in which case this material may in itself be either a poison or a soluble ferment. The former is the sole mode admitted, to the exclusion of all others, in the doctrine of animated pathology.

"Finally, the anatomical elements, by engrafting themselves upon an organism of which they thence form an integral part, may transmit to this organism, by contagion or infection from element to element, the disease of the organism from which they proceed.

"If, from these general data, one passes to the examination of the mode of action of each order of agent in particular, by taking count

concurrently of the natural evolution of the malady to which it gives rise, it is difficult, and often even impossible in the actual condition of science to make out the exact part played by each of the constituent elements.

“Thus effluviæ may act either as a poison or as a ferment, by volatile or soluble matters, or by the microphytes which they contain. We have given the reasons which have led us to attribute to them by preference a toxic influence, but this is but an hypothesis.

“The infectious (miasmatic or virulent) maladies develop spontaneously, or are the result of the transportation of a certain *contagium* from a diseased to a healthy organism.

“In the former case, miasms act in the most complex manner, and it is probable that the disease results from the combined action of their constituent elements, and from the activity or proper disposition of the organism subjected to their influence.

“In the second case, the miasms and viri, although always complex in their constitution, seem to act chiefly, and even essentially, by the anatomical elements which they contain—anatomical elements diseased and more or less altered, but retaining a sufficient amount of vitality to become engrafted, and to live in the organism which receives them, and to which they transmit the disease.

“The therapeutical action of medicinal agents is rarely simple, and still more rarely applies itself to the original cause of the disease. It is impossible, then, in investigating and demonstrating the nature of the agents which give rise to infectious maladies, to rely upon the antiseptic or parasitic properties of substances which seem, in the treatment of these maladies, to give the best results.

“The most general conclusion which follows from the preceding study is this: that in the genesis, evolution, and propagation of maladies, the part played by microzoa and microphytes, instead of being capital and essential, is secondary and essential, and that one cannot, like the supporters of the doctrine of animated pathology, recognise the parasitic nature of diseases effluvial, miasmatic, or virulent in their origin.”

ART. 19.—*Treatment of Lumbago.*

By SAMUEL WILKS, M.D., F.R.S.

(*The Lancet*, June 4.)

Cases of acute or recent lumbago are generally amenable to warm stimulating applications, as hot air, steam, fomentations, hot water, and tincture of capsicum; but when the affection has become chronic, it is frequently most intractable. Dr. Wilks has seen good results from the subcutaneous injection of morphia in cases where a prolonged medicinal treatment has been of no avail. Galvanism, also, is equally beneficial in obstinate cases.

ART. 20.—*Choleraic Infection.*

By RICHARD LEWIS, M.D.

(Indian Sanitary Reports.)

The following are the conclusions at which Dr. Lewis has arrived:—

“1. That no ‘cysts’ exist in choleraic discharges which are not found under other conditions;

“2. That cysts or ‘sporangia’ of fungi are but very rarely found under any circumstances in alvine discharges;

“3. That no special fungus has been developed in cholera stools, the fungus described by Hallier being certainly not confined to such stools;

“4. That the still and active conditions of the observed animalculæ are not peculiar to this disease, but may be developed in nitrogenous material even outside the body;

“5. That the flakes and corpuscles in rice-water stools do not consist of epithelium, nor of its *débris*, but that their formation appears to depend upon the effusion of blood-plasma; and that the ‘peculiar bodies’ of Parkes found therewith correspond very closely in their microscopic and chemical characters, as well as in their manifestations of vitality, to the corpuscles which are known to form in such fluid; these are generally, to a greater or less degree, associated with blood cells, even when the presence of such is not suspected, especially as the disease tends towards a fatal termination, when the latter have been frequently seen to replace the former altogether; and

“6. That no sufficient evidence exists for considering that vibriones, and such like organisms, prevail to a greater extent in the discharges from persons affected with cholera, than in the discharges of other persons, diseased or healthy; but that the vibriones, bacteria, and monads (*micrococcus*) may not be *peculiar in their nature*, for these *do vary*, may not be the product of a peculiar combination of circumstances, and able to give origin to the peculiar phenomena in a predisposed person, is ‘not proven.’”

ART. 21.—*A Case of Addison's Disease.*

By T. P. HESLOP, M.D., Physician to the Queen's and Children's Hospitals, Birmingham.

(The Lancet, June 4.)

Dr. Heslop places the following case on record, as it offers a characteristic example of supra-renal melasma, in respect of constitutional symptoms, special colour-change, and morbid condition of the capsules. The subject of the malady appeared among Dr. Heslop's out-patients, and was at once accurately discriminated by Dr. Sawyer, the resident physician of the Queen's Hospital, to whom Dr. Heslop is indebted for the notes of the case.

George F——, aged twenty-one, single, tin-plate worker, admitted March 2, 1870.

History.—He stated that his health had been good until about three years ago; he had been tolerably stout, his complexion fair, and his cheeks ruddy. He was first troubled with a sense of fulness and pain in the region of the stomach after eating, and always had a special distaste for fatty food. He found he was getting thinner, and his appetite was failing. At the same time he noticed that he was becoming darker in colour all over the body. During the last nine months he had suffered from a dull aching pain in the loins, and was often troubled with headache. He gradually grew weaker, and the darkness of the skin slowly increased up to the time of his admission into the hospital. About a year ago he had a soft chancre. His father died of phthisis.

On admission the whole of the surface of the body was of an olive-brown colour. The skin might be said to be bronzed; it was dingy and smoky, and the patient looked like a mulatto, but his hair was flaxen. The dark coloration was most marked on the face and neck, on the knees, and around the navel. On the left cheek and on the forehead several almost black patches existed, and the nipples and areolæ were very dark. The deepest tint was observed on the penis; but on the prepuce a perfectly white patch, corresponding to the cicatrix of the chancre, was found. The lips, gums, and buccal mucous membrane were decidedly darkened, but no patches of dark colour were observed in the mouth. The conjunctivæ were pearly white, contrasting strongly with the dusky hue of the skin. The pulse was feeble, and the heart-sounds were weak. He was incapable of anything but the slightest exertion. He suffered from giddiness, retching, and vomiting after his meals, and complained of pain in the region of the stomach. The bowels were constipated; the urine normal. Physical examination failed to reveal any visceral disease.

From the time of his admission he gradually grew worse. The darkness of the skin increased, and the retching and vomiting continued. The asthenia grew more marked, the intellect remaining clear to the last. He died from syncope, following slight exertion, on the 18th of March.

Post-mortem examination.—The body was found to be spare, but not extremely emaciated. The surface was slightly, though decidedly, paler than during life. The muscles presented their normal red colour. The apices of both lungs were firmly attached by old adhesions to the costal pleuræ. In the upper lobe of the left lung a few scattered nodules of grey tubercle were found; the lungs were elsewhere crepitant and healthy. The pericardium contained about half an ounce of yellow serous fluid. The heart weighed $7\frac{1}{4}$ oz.; its texture was normal; a small fibrinous clot was found attached to the walls of the right ventricle. The liver weighed 2 lb. 13 oz.; its structure was healthy. The spleen weighed 10 oz. The supra-renal capsules were much enlarged. The right capsule was of its normal shape, and weighed 3 dr. 40 gr. The left capsule was rounded, thickened, elongated, and somewhat nodulated on the surface; it measured three inches in length and three-quarters of an inch in thickness; it was not weighed, being preserved attached to the kidney. The connective tissue surrounding the capsules did not appear to be thickened or consolidated, but the bodies were firmly adherent to the adjacent organs. On section, all evidence of normal structure, cortex and medulla, was lost. The capsules of th

supra-renal bodies were slightly thickened, and they were filled with an opaque, yellowish, and almost homogeneous substance, of cheesy or putty-like consistency. It might be described as looking like concrete pus, or pus with the liquor puris drained off. On microscopic examination this material was found to consist of round cells, somewhat larger than, but otherwise much like, ordinary pus-cells. They did not, however, display their contents as clearly as these latter cells on the application of acetic acid. The kidneys were healthy; a careful dissection failed to reveal any abnormality in the sympathetic nerves and their ganglia in the abdomen. The lumbar and mesenteric glands were normal. Peyer's patches were very prominent, and they presented a "shaved-beard" appearance. The blood, on microscopic examination, exhibited no abnormal condition. The brain was healthy.

ART. 22.—*Researches on the Alterations in the Weight of the Body of Syphilitic Subjects before and after Treatment.*

By Dr. TOMOWITZ.

(*Allgemeine Militarärztliche Zeitung*, 12 u. 13, 1870 ; *Schmidt's Jahrbücher*, No. 8, 1870.)

Proceeding from the fact that in syphilitic cachexia a reduction in the weight of the body usually occurs in the subjects of the disease, some syphilographers assert that with eradication of the syphilitic virus an increase in weight must be associated, and that after a course of treatment carried out with success, this increase in the body-weight will take place.

In order to prove this view, Dr. Tomowitz has carried out some investigations on the weight of patients, which, although relatively few in number, were not without results. In order to avoid error as much as possible, Dr. Tomowitz thought it necessary to investigate those changes in the weight of the bodies of venereal subjects which are brought about by a long stay in a hospital. With this aim he took the weight of the bodies of twenty-five patients suffering from gonorrhœa and soft chancre, both on their admission and on their discharge from the hospital. He next weighed fifty subjects with marked constitutional syphilis, who had undergone the inunction plan of treatment; at the same time were noted the number of inunctions and the duration of the stay in the hospital. In all instances the individual was weighed naked, and in the morning, so that the result of the weighing could not be influenced by the clothes or by food.

With the twenty-five non-syphilitic patients, there was an increase of weight in twenty-one instances, and a decrease in only four instances. The greatest increase amounted to four pounds, but it generally varied between one and a half and two and a half pounds. The decrease in weight in no instance exceeded one pound. The longest period of treatment lasted for eighty-four days; the shortest, ten days; in the former instance there was an increase of two pounds, in the latter there was a difference amounting to half an ounce.

The alterations of the body-weight of syphilitic subjects were found to

be very different. In spite of the good diet given in most instances during the whole course of the treatment, thirteen only of the syphilitic patients treated by inunction showed any increase in weight at the time of their discharge, and thirty-seven, on the other hand, a loss in weight. The increase in weight varied between one and four pounds, the loss in weight between one and eight pounds. The greatest number of practised inunctions was thirty-two, the duration of the treatment being forty-eight days. Here the loss of weight amounted to one pound. The smallest number of inunctions was ten, the treatment lasting from twenty-four to thirty days. Here there was both gain and loss of weight. The longest period of treatment was seventy-nine days—twenty-four inunctions, increase of weight four pounds. The shortest period was twenty-four days—eleven inunctions, the loss of weight amounting to three pounds. It is proved by these results that in a very great majority of cases loss of body-weight takes place during the inunction treatment of syphilis. Dr. Tomowitz, however, has not been able to discover that this loss of weight bears any relation to the number of inunctions practised, to the intensity of the disease, or to the duration of the treatment. The number of inunctions seems to have no influence upon the reduction of the body-weight. The circumstance that, in spite of good nourishment, a decrease of body-weight more frequently occurs than an increase during the patients' stay in a hospital, would most probably, according to Dr. Tomowitz, depend upon the nature of the syphilitic cachexia.

From the investigations of Dr. Tomowitz it seems to be proved that (1st) with well-nourished *venereal* patients, even a prolonged sojourn in a hospital does not cause debility, and (2nd) a *syphilitic* patient even after a complete eradication of the disease, requires a long period for his recovery.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 23.—*Treatment of Delirium Tremens.*

By CHARLES MURCHISON, M.D., LL.D., F.R.S., Physician to the Middlesex Hospital.

(*The Lancet*, October 29.)

Dr. Murchison brings the following cases under notice, more especially in reference to the vexed question of treatment.

CASE 1.—W. P., aged thirty-four, in H.M. Civil Service, admitted January 17th. For six years had been very intemperate, and had five previous attacks of delirium tremens, none very severe. Symptoms in this attack of moderate severity; no albumen in urine. Treatment: Bark and mineral acids; and for two nights a draught with 15 minims of solution of opium; nutritious food, but no stimulants.

Discharged well on Feb. 1st.

CASE 2.—Erskine W., aged thirty-five, a surgeon, admitted April 4th. His father had suffered from gout, and his mother was insane. He had

had a good deal of mental anxiety, had been drinking hard for twelve months, and had been several times on the verge of delirium tremens. Sixteen hours before admission he was seized for the first time with severe epileptic convulsions, foaming at the mouth, and biting the tongue, &c., and before being brought to the hospital there had been sixteen fits in all. On admission, quite unconscious, but no stertor; occasionally delirious and excited; urine contains one-fifteenth of albumen; area of hepatic dulness contracted; breath offensive. He was freely purged with croton oil and enemata, and took a mixture of bromide of potassium and carbonate of ammonia, with milk and beef-tea, and four ounces of brandy (ordered by one of the resident medical officers). One or two fits occurred after admission, but on April 6th there had been no recurrence of them for thirty-six hours, and he seemed quite conscious. On the same evening, however, well-marked symptoms of delirium tremens set in. He slept none, and next day was very excited, and had a quick 100 intermitting pulse. Half a drachm of hydrate of chloral, in conjunction with ammonia, was now ordered every four hours, but no alcohol. After the second dose he went to sleep, and awoke after fourteen hours free from all illusions. From that time until his discharge from the hospital on April 16th, he remained free from convulsions and from any symptoms of delirium tremens, and all trace of albumen disappeared from the urine.

CASE 3.—Walter W., aged thirty-nine, a surgeon, admitted April 9th. He had an unmistakable history of phthisis, and in both lungs were extensive signs of tubercular infiltration in an advanced stage, and there was also recent pneumonia with rusty sputa in the upper lobe of the left lung. For many years he had been very intemperate, and for six weeks he had been drinking very hard. On admission, he was in a state of delirium tremens; had not slept for several nights; was very excited; threatened to shoot his wife, &c. Urine contained one-third albumen. He was ordered half a drachm of chloral every four hours. After the fourth dose he had a prolonged sleep, on awaking from which the symptoms of delirium tremens had almost disappeared; but he rapidly sank from an extension of the pulmonary mischief, and died on April 12th, at 8.30 P.M. Brandy (six ounces) was allowed on account of the phthisis.

CASE 4.—William S., aged forty, a butler, admitted April 27th. Been very intemperate for many years, and drinking very hard, mostly gin, for one month. Delirium tremens set in three days before admission. Pulse 108; frequent vomiting; nothing retained on stomach; urine scanty, and contained one-third albumen; liver large and tender. He was first ordered bismuth and chloral (half a drachm every four hours), and sinapisms to epigastrium. No stimulants. After six doses the vomiting had quite ceased, but there had been no sleep. He was now ordered a draught every four hours with fifteen minims of tincture of digitalis and four grains of carbonate of ammonia, and to continue the chloral. Under this treatment he slept at intervals on the night of the 29th, and soundly on that of the 30th. On May 1st the symptoms of delirium tremens had passed away, the appetite was returning, and the albumen had quite disappeared from the urine. On two or three occasions subsequently he had symptoms of congested liver and restless nights, requiring a return to aperients and the digitalis and chloral; but when he was discharged, quite well, on May 30th, his urine was still free from albumen.

The leading symptoms of delirium tremens are mainly three—viz., 1. Sleeplessness; 2. Illusions and delusions of a peculiar form; and 3. Tremors of the muscles. Among other less frequent symptoms are, a quick, soft pulse, without any rise of temperature; white, furred

tongue; loss of appetite, and craving for stimulants; offensive breath; vomiting; and injected conjunctivæ.

With regard to the treatment of delirium tremens, the objects are twofold: first and foremost, to procure sleep; and secondly, to induce the patient to substitute solid food for alcoholic stimulants.

"1. Most medical men are agreed," Dr. Murchison stated in his lecture, "that sleep is the great desideratum in delirium tremens; but there is great difference of opinion as to the best way of inducing it. Let us briefly review the remedial measures which are most relied on:—

"(a) *Alcohol*.—It has been contended that delirium tremens is almost invariably the result of abstaining from stimulants by a person who has been previously intemperate, and that the best way of inducing sleep is to administer brandy and other alcoholic stimulants in frequently repeated doses. According to my experience this doctrine is founded on error, and the practice is most pernicious. You will have noticed that all our patients had been drinking hard up to the commencement of the symptoms, and this I believe to be the rule. Give alcohol, and you only add fuel to the fire, and keep up congestion of the stomach, liver, and kidneys. Medical men, in my opinion, dread too much the consequences of withdrawing alcohol in the treatment of delirium tremens. I have long been in the practice of giving none, except in cases where there has been evidence of fatty heart, or an intermitting pulse, or there has been some complication calling for its use, as in Case 3. The patient no doubt often experiences considerable distress, but I have never seen any bad consequence from suddenly cutting off the large supply of alcohol in which he has been indulging before the attack. This result of my former experience has been borne out by the cases which have been under your observation.

"(b) *Food*.—In all cases it is well that the patient should have as much nutritious food as he can digest. Some authorities contend that all that is necessary to induce sleep is to give strong beef-tea and other nutriment of a like nature. This, and abstaining from stimulants, will no doubt suffice to effect a cure in mild cases; but that sleep will follow this in severe cases is quite opposed to my experience, while in not a few bad cases there is congestion of the stomach and liver, and food of all kinds is rejected. It is necessary, therefore, to be provided with other means for inducing sleep.

"(c) *Opium* and its preparations were for a long time the drugs chiefly relied on for inducing sleep in delirium tremens. Of late years they have fallen into discredit, and now many practitioners never have recourse to them. Experience shows that in many cases opium acts like a charm in speedily putting an end to the disease; while in others it fails entirely in inducing sleep, or may aggravate the symptoms, or even cause convulsions and coma. The question at once arises: Is there no explanation of this difference?—is it impossible to say when opium is likely to succeed or not?—or must we, from being uncertain of the result, abjure the use of opium altogether? My opinion is, that an explanation of the difference is to be found in the state of the kidneys, as indicated by the characters of the urine. Whenever the urine contains albumen as the result of recent congestion or old disease of the

kidneys, opium is almost certain to fail, and even prove injurious; and, accordingly, it is a good rule never to give opium until an opportunity has been offered to test the urine. But when the urine has been ascertained to be free from albumen, opium may be given without fear, and usually with the best results. Whatever preparation is employed, it is best to commence with a full dose, and give a smaller dose every three hours afterwards until sleep ensues. When the skin is dry, or the patient much excited, the opium may be advantageously combined with antimony, in the manner recommended by the late Dr. Graves.

“(d) *Digitalis* is another remedy of undoubted power in the treatment of delirium tremens. It is particularly indicated in cases where the urine is scanty or contains albumen, or where the patient is very excited. I have known it to act most beneficially in cases where opium had failed. Its good effect is not attributable to the alcohol of the tincture, for the large doses recommended by the late Mr. Jones, of Jersey, are quite unnecessary. It appears to act mainly in virtue of its sedative, and yet tonic, influence over the organs of circulation; while the large flow of urine following its use makes it probable that it assists in the removal of deleterious matters from the blood. From fifteen to thirty minims of the tincture may be given, with or without carbonate of ammonia, every four hours.

“(e) *Bromide of potassium* has been strongly recommended for delirium tremens; but in severe cases I have not found it alone of much service in securing sleep, although it has seemed to act beneficially in moderating active delirium or mental excitement.

“(f) *Hydrate of chloral*.—Delirium tremens is one of the many maladies in which this new drug has been used with advantage. It is a remedy for inducing sleep which is particularly applicable in those cases where opium is contra-indicated. It does not, like opium, interfere with elimination by the kidneys; and indeed there are grounds for believing that the existing impurities of the blood favour the action of the chloral by assisting in the liberation of chloroform. One caution is necessary with regard to it. Not only in delirium tremens, but in other diseases, the first action of the chloral (like that of an insufficient dose of chloroform) is exciting rather than sedative. You must not on that account infer that it is acting injuriously, for a second dose will often produce the desired sleep. The best way to give it is in doses of half a drachm every two or three hours until sleep results.

“These are the remedies to which you must mainly trust for inducing sleep in delirium tremens; but remember that the action of all of them will be materially assisted by a kind and considerate and yet firm manner towards the unfortunate patient, by never flatly contradicting him, and by avoiding as far as possible all appearance of bodily restraint.

“2. The patient must be brought as soon as possible to substitute solid food for alcoholic stimulants. For this end it may be necessary in the first place to remove congestion of the stomach and liver by counter-irritation, aperients, bismuth, &c.; and when the stomach is in a quiet state, the appetite may be stimulated by the mineral acids, quinine, and other bitter tonics. In private practice, where it is sometimes impossible to cut off stimulants to the desired extent, it is a good rule to insist that they shall never be taken unless with solid food.”

ART. 24.—*On Visceral Neuralgia.*

By Dr. ALBERT EULENBURG, Lecturer on Clinical Medicine
in the University of Berlin.

(*Medical Times and Gazette*, July 30.)

Neuralgia Hypogastrica.—This affection was first described by Romberg under the name “hyperæsthesia of the hypogastric plexus.” It is characterized by pain in the lower abdominal and sacral regions, which is combined with a sensation of pressure on the rectum, bladder, and female genital organs, and which is frequently accompanied by radiation into the thighs and parts supplied by the hæmorrhoidal nerves. The disease is most frequently met with in connexion with changes in the circulation within the pelvis; in men it therefore accompanies hæmorrhoids, and in women it is combined with hysteria and menstrual irregularities, particularly at the time of puberty. To this form of neuralgia belong several of those conditions which, amongst the public as well as amongst some medical men, go by the name of “hæmorrhoidal colic” or “menstrual colic.” The theory of the sympathetic nature of the disease Romberg bases on the changes of circulation and secretion of the respective organs, which changes he considers as consequent on hyperæsthesia of the hypogastric plexus. It is, however, questionable whether the local changes in circulation and secretion—especially the catamenial irregularities—do not precede the neuralgic symptoms, and stand to them as causes.

With regard to the relation of these neuroses to the hypogastric plexus it must be stated that we know very little of the physiological functions of this plexus, particularly of its sensitive capabilities, so that an explanation of all the local symptoms cannot be given by it. According to some experiments made by Budge the sensitive and reflex nerves of the bladder and urethra appear to proceed partly along the tract of the hypogastric plexus; according to the experiments of Obermier, Frankenhauser, and Körner—which, however, are contradictory to some others made by Kehrel—the hypogastric plexus appears to contain all, or at least the most important motor nerves of the female genital apparatus, whether however sensitive and reflex nerves to those organs are also contained in it has not yet been demonstrated. The track of these nerves is probably similar to that of the sensitive nerves of the vesical plexus, which, according to Budge, pass to the posterior roots of the lumbar and sacral nerves through the plexus hypogastricus, and the rami communicantes.

With such uncertainty with regard to the series of symptoms which has been described as hypogastric neuralgia, and with the pathology and etiology of the affection still enveloped in obscurity, the main point therapeutically is to discover in particular cases any organic lesions of the female genitals, bladder, or rectum, and to counteract the effects of these. Besides this, the pain—like that of all other forms of neuralgia—may require the administration of palliatives.

To neuralgia of the hypogastric plexus, some other neuroses of the urino-genital apparatus ought to be added, which have been described

by Romberg and others as hyperæsthesia of the spermatic plexus. To this seems to belong the *neuralgia of the urethra*, which is only observed in men. Further the amorous propensities may increase to an intense degree of hyperæsthesia (Romberg). This is frequently observed in women, and is exceptional in men. In this last mentioned affection the term hyperæsthesia used by Romberg is really justifiable; it is not a neuralgic affection in the strict sense of the term, but a real hyperæsthesia of the genital mucous membrane in the form of hyperalgia. The pain does not arise spontaneously in consequence of abnormal organic irritation, but occurs as an excessive reaction on external irritation, which in the physiological state does not induce pain, but only a general libidinous feeling. Here again must be mentioned that form of neurosis described by Gooch (1831) as “irritable uterus,” by subsequent authors as “uterine neuralgia,” the sympathetic origin of which is at least doubtful. Cohen is of opinion that it is a perineal ileo-lumbar neuralgia, to which vaso-motor neurosis of the uterus (congestion, hæmorrhage, secretory changes) has been added secondarily and dependent on the former. The opposite view that the changes in sensibility are consequent on primary disease of the uterus is, according to the same author, opposed to the order of appearance of the phenomena.

Spermatic Neuralgia.—As “hyperæsthesia of the spermatic plexus,” besides the neurosis which has been just described, another form of neurosis affecting the male genital organs is given by Romberg and others under the name “irritable testis” (Cooper) or “neuralgia testis,” which is characterized on the one hand by spontaneous paroxysmal pain in the testis and epididymis extending along the spermatic cord, and on the other hand by excessive sensitiveness to touch and pressure. Besides the neuralgic pain, there exists almost constantly a real hyperalgia of the testes, which may be so intense that the touch of the clothes, as well as any attempt at movement or change of position, also mere standing without giving support to the scrotum, is excessively painful. The paroxysm of pain is often combined with retraction of the testicles, in consequence of spasmodic contraction of the cremaster muscles. Sometimes the patient suffers from nausea and vomiting. Swelling of the testes and cord or other evident external changes, more particularly varicocele, are by no means so common as has been stated by various authors.

Some writers—Curling, for instance—have separated “irritable testis” as a form of hyperæsthesia merely, from the “neuralgia testis,” which is accompanied by spontaneous paroxysms of pain. I hold the opinion that no reason for such distinction exists, because spontaneous pain and hyperalgia of the testes, as a rule, exist together, and both united form the disease called spermatic neuralgia. Concerning the seat of the pain, opinions differ in the same way as they do with regard to uterine neuralgia, whilst some authors—Romberg and Hasse—look upon the spermatic plexus of the sympathetic as the origin of the evil. Others place it in the cerebro-spinal nerve trunks of the lumbar plexus, as, for instance, Valleix, who considers the affection identical with that neuralgia ileo-scrotalis described by Chaussier (1803) and Cohen. The latter of these two thinks that it is a primary genito-crural neuralgia, to which as in uterine neuralgia, a secondary affection of the vaso-motor nerves is

added. The swelling and dilatation of the vessels of the testicle, therefore, according to Cohen, forms no primary causation, but a secondary effect, whilst, on the other hand, Hasse derives the neuralgia principally from dilatation of the veins (with or without varicocele) of the testicles.

Concerning the nerve trunks affected, positive evidence seems impossible: physiology does not inform us of any sensitive functions of the spermatic plexus, and pathology has not up to the present time afforded any facts for our guidance. Similar ignorance must be confessed with regard to the etiology of spermatic neuralgia. The disease occurs, as a rule, in young or middle-aged persons. Functional irritation and local affections of the generative apparatus of males, excessive venery as well as abstinence, onanism, gonorrhœa, chronic orchitis, epididymitis, and prostatitis have been accused as causes. Spermatic neuralgia is, however, relatively of rare occurrence in connection with the affections just mentioned, and when the connexion does exist, the bearings of the one disease on the other, as well as the relation of the primary local disorder to the secondary neuralgia, are quite unintelligible to us. Cooper and others assumed a central (spinal) origin to the affection in some cases. Against this assumption, it has been stated that peripheric lesions—castration, for instance—have sometimes a beneficial influence; but this objection does not to me seem valid in the face of the good results obtained by section of peripheric nerves in neuralgias of decidedly central origin and of other nerve trunks, as the trigeminal.

Neuralgia of the testis is as obstinate as it is painful and tormenting in all respects. Like other changes in the genital apparatus, it sometimes produces psychical reaction altogether out of proportion to the gravity of the disease, hypochondriasis, melancholia, and so on. The affection sometimes has remissions of long duration, but it never ceases entirely.

The treatment is somewhat experimental, the pathology and etiology being still obscure. Support of the testicles by a suspensory band gives relief from pain. Various remedies have been tried—tonics, iron, quinine; now cold douches, hip-baths, sea-baths; and now narcotics, arsenic, turpentine, and many others. The greatest relief has unquestionably resulted from hypodermic injections of morphia, which may be most efficaciously employed in the region of the spermatic duct. Some cases are on record in which marriage has effected a cure.

With regard to operative treatment, ligature of the spermatic veins, and subcutaneous incision of the tunica albuginea (Vidal), as well as ligature of the spermatic artery (Bardeleben), have in some cases acted beneficially, although no permanent effect resulted. Castration, sometimes urgently demanded by the patient, has in some cases effected a cure (Russell, Astley Cooper); in others, the disease recurred in the spermatic cord or in the testis of the opposite side. It is very probable that the beneficial result of all these manipulations has been effected chiefly through a centripetal route, as the seat of the disease can scarcely be considered to be in the testicle itself. The same explanation perhaps applies to those cases in which, according to Curling, cauterization of the pars prostatica urethræ has effected cure in patients who have at the same time suffered from spermatorrhœa.

ART. 25.—*On the Pathology of the Great Sympathetic.*

By MM. EULENBURG and GUTTMAN, of Berlin.

(Archiv für Psychiatrie, t. ii. ; Archives Générales de Médecine, Septembre, 1870.)

Under this title Eulenburg and Guttmann have published a series of monographs, in which are described, from the recent data of science, all the maladies which may be attributed to lesions of the great sympathetic.

Progressive muscular atrophy.—The authors who have studied this affection may be ranged in two divisions; those who follow Aran in considering it as a simple myopathia, and those who admit, with Cruvelhier, that it consists in a neuropathia.

Schneevogt was the first to direct attention to concomitant changes in the great sympathetic, and to ocular-pupilar phenomena. Although the great sympathetic seems to play an important part, it is considered by authorities that the anatomical lesions hitherto observed, and the physiological analysis of the symptoms, do not allow them to pronounce absolutely concerning the nature of this strange malady.

Three chief questions have still to be resolved: Firstly. Are the lesions of the great sympathetic constant in progressive muscular atrophy? Secondly. If they are, is the disease transmitted to the great sympathetic by following a centripetal course; that is to say, by extending from the muscles to the peripheral nerves, to the spinal nerves, &c.? Or, Thirdly. Does the affection commence in the great sympathetic, and follow a centrifugal course?

On the subject of treatment the authors mention the good effects obtained after galvanization of the great sympathetic.

Angina of the chest.—After having disposed in a complete manner of the historical part of this subject, and discussed all the published facts and theories, the authors resume in these words:—"Angina of the chest is a neurosis both of movement and of sensation. The symptoms to which it may give rise may be excited by causes of a different nature and even independent of the heart. All the cardiac nerves are probably more or less affected in this malady, and the variability of the phenomena observed in different patients, is doubtless owing to the more or less active part which the nerves uniting the cardiac plexuses take in the production of the symptoms. It is probable that the great sympathetic plays the most important part, for it is this structure which forms the major part of the cardiac plexus.

Hyperæsthesia of the mesenteric plexus: lead colic.—The authors imagine that the spasmodic phenomena which arise in the intestines are due to the direct action of lead on the muscular layers of the intestinal tube. The weakening of the cardiac impulse, which is often observed in these cases, is considered as a reflex symptom due to the excitation of the nerve of arrest of the heart—the pneumogastric, through the sensory nerves of the intestines—the great sympathetic. Much anguish, with threatening syncope, analogous to that of angina pectoris, would be a neuralgic phenomenon excited by the same nerve filaments.

The pain would have its origin in these fibres, and be transmitted to the sensorium through the splanchnic nerves. The constipation would be partly due to the action of the splanchnic nerves. In short, the malady would then be equally characterized by a simultaneous affection of the sensory and motor fibres of the great sympathetic.

Hyperæsthesia of the solar, hypogastric, and spermatic plexuses.—It is very difficult to say whether these hyperæsthesiæ are dependent upon the fibres of the great sympathetic, or are simply due to neuralgiæ of the cerebro-spinal nerves. The data supplied by physiology are not yet sufficiently complete to enable us to decide this question.

It would be equally hazardous to admit the supposition of anæsthesiæ of fibres of the great sympathetic. The existence of these anæsthesiæ has not been proved either by anatomical lesions or by physiological experiments. Moreover, the sensibility of the filaments of the great sympathetic is feeble and obscure; therefore, the disturbances by which it is affected would be very difficult to appreciate. It has been suggested also, to attribute the arrest or the diminution of the reflex movements—those of the intestine, for example—to an anæsthesia of the filaments of the great sympathetic. This hypothesis is erroneous, for disturbances occurring in reflex movements may be produced even in cases where the sensibility remains perfectly intact.

Paralysis, and convulsions of smooth muscles dependent upon the great sympathetic, ought to be admitted without doubt. One cannot say, on the other hand, whether the great sympathetic plays any part in motor disturbances of muscles under the control of the will.

According to Remak, *diphtheritic paralyses* also depend upon the great sympathetic. Neither physiology nor pathological anatomy have yet confirmed the assertions of this observer.

The authors do not admit the theory of Duchenne and Remak concerning the production of locomotor ataxy, and think that this affection occurs quite independently of the great sympathetic.

ART. 26.—*On the Functions of the Sympathetic System of Nerves.**

By EDWARD MERYON, M.D., F.R.C.P.

(*The Lancet*, July 16.)

The author commences by showing that every sympathetic ganglion, in all animals, is connected with three forms of nerve-fibres—namely, motor, sensory, and sympathetic proper, or the fibres of Remak. That on entering a ganglion these several forms of nerves separate into their component fibres, and unite with the ganglionic caudate cells. That each ganglion thus becomes a nervous centre in its own sphere, receiving, transmitting, originating, and reflecting impressions, on which the functions and nutrition of organs depend.

* Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, June 14.

Experiments and observations are next adduced to prove that the sympathetic has little or nothing to do with the motions of the iris; but that these actions depend upon the third cerebral nerve, and the fibres proceeding from the regio cilio-spinalis of Wagner and Ruiter.

Dr. Meryon then enters into the inquiry relative to the special function of each different form of nerve-fibre respectively, which goes to or proceeds from every ganglionic centre; and, from many experiments and cases, he shows that the motor fibres which proceed from each ganglion, having their terminal fibres extending to the most minute arterioles, give an impetus to the blood current, and are subservient to the functions of the secretory tissues. That the sensory fibres communicate an organic or vital sense to the secretory glandular tissues, just as the muscular sense is conferred on, and conveyed from, the muscles to the nervous centres, to communicate a stimulus to muscular action; that, in fact, the sensitive nerves affect the histological tissues, without operating *immediately* upon the bloodvessels. Finally, that the fibres of Remak—or the sympathetic fibres proper—having a correlative ramification with the motor fibres, regulate the stream of nutriment which is conveyed by the arterioles into the cell-territory for secretion and nutrition. This latter function is effected by the restraining or inhibitory attribute of the fibres of Remak.

On these views Dr. Meryon proposes, in a future paper, to suggest a system of rational therapeutics, founded upon the properties which many medicines are known to possess, of inducing, through the influence of the vaso-motor nerves, the contraction or dilatation of bloodvessels.

ART. 27.—*A Case of Sick Headache.*

Under the care of Dr. BUZZARD, at the National Hospital
for Paralysis and Epilepsy.

(*The Lancet*, July 23.)

We note the following case because it was a severely marked example of a not uncommon affection in which great benefit was derived from treatment. The notes are from the record of Mr. W. R. Gowers, medical registrar to the hospital.

Charles W—, aged thirty-six, labourer, applied as an out-patient on May 11th last, with the following story:—For the last two years he had been subject to attacks of very severe pain at the top of his head, which came on suddenly, lasted for a variable time (from a few hours to two or three days), and terminated with intense giddiness, so that he could not open his eyes, and nausea. The giddiness and nausea would be followed by vomiting, and then the phenomena ceased. The first attack came on without apparent cause two years ago, and there has gradually been a more and more frequent recurrence. During the last two months he would be affected many times weekly. Since the first he had suffered from constant ringing noises in the left ear, and on this side he was quite deaf. He was quite incapacitated from work.

As regards antecedents he had generally enjoyed good health, but just

previous to his present illness he had been exposed to great worry of mind and bad living. He had been temperate; had never had syphilis. Eighteen years ago he had received a very severe blow on the left side of his head, which had, however, caused him no subsequent inconvenience.

His tongue was clean; his pulse somewhat feeble. The otoscope displayed the membrana tympani of the left side of a pearly whiteness; there was no wax in the canal; the introduction of the instrument caused a bell-like sound to be heard, as he described it, "right through his head." His manner was tremulous. He was ordered to take two drachms of Parrish's compound syrup of the phosphates three times a day.

May 25th.—States that the attacks, though continuing, are less severe. He does not become sick, and the character of the sensation has changed, being now like "a wind blowing through the head."

June 8th.—He can hear a little now on the left side; the noise has much diminished; there has been a little return during the last two days of the pain in the fore part of the head, which had left him entirely on taking the medicine.

July 6th.—He is much better than he has been for two years past; there is much less tremor; hearing greatly improved; and though there is still noise in the head, this is much diminished. He is returning to work.

Dr. Buzzard remarked that this case was a good illustration of a form of neuralgia. The most prominent symptoms were pain at the vertex, vertigo, tinnitus aurium, and deafness. The association of these phenomena was frequent enough to lead to a plausible inference that one and the same cause gave rise to symptoms apparently so dissimilar. The giddiness, for example, might be looked upon as an *expression* of that kind of influence directed to the cerebral vaso-motor system, in immediate relation with the fifth, which in a sensory nerve produced pain. And so the ringing noise in the ear might well depend upon altered calibre of the internal carotid or a branch, due to a more permanent impression upon the plexus of that vessel. As regards the deafness, the fact of its passing away under treatment would point to the probability of its depending rather upon some defective action of the hearing machinery (analogous to impaired vision from faulty accommodation in the eye), than upon any affection of the auditory nerve. The intimate nervous connexions within, or in the immediate neighbourhood of the internal ear, would account anatomically for the diverse phenomena remarked in this case. The nausea and vomiting appeared to represent the climax of nerve-depression attending the paroxysm.

Such cases as these, Dr. Buzzard said, were often kept up and increased in severity by patients themselves, who referred the symptoms to "biliousness." In consequence of this they avoided butter, and dosed themselves with aperients, whereas oleaginous food was peculiarly necessary to them, and drugs of a nutritive character should alone be employed.

ART. 28.—*Epileptiform Convulsions of Sixteen Years' Duration from Parietal Depression : Trephining : Recovery.**

By ANTHONY BELL, M.R.C.S., Newcastle.

(*British Medical Journal*, September. 24.)

The patient, a young lady aged twenty-four, was first seen by Mr. Bell on June 1st, 1869. At the age of seven she fell down stairs; her head coming into contact with the angle of a chair, a depression of the cranium over the right parietal eminence was produced. From this time she had never been a day free from pain at the seat of injury; she had also suffered from epileptiform convulsions, headache, vertigo, loss of memory, and other head-symptoms. There was a depression about the size of a half-crown over the parietal eminence, pressure over which caused some pain. There was œdema of the face, especially on the right side; her countenance was dull and heavy; she was unable to count to five, or to remember her own name or that of the commonest articles. During two months, she was treated by blistering, bromide of potassium, &c.; the fits, however, went on increasing in intensity and frequency. On August 1st, Mr. Bell applied the trephine (the patient being under the influence of chloroform), and removed a piece of bone of the size of a shilling, at the most depressed part. The dura mater was somewhat congested, bulging, and without pulsation. It was opened with the point of a bistoury; and about an ounce of clear serum was driven out by the pressure of the brain as the organ regained its position. The patient went on well, losing the pain and the fits, recovering her memory, and improving in health and general appearance. At the time of relating the case (a year after the operation) she had been quite free from pains in the head and from fits, was strong and vigorous, and her memory was tolerably good. In commenting on the case, Mr. Bell said that the conditions which might be met with inside the cranium in such a case were, softening of the brain, suppuration or cystic abscess, thickening of the dura mater from strumous or tubercular deposit, or effusion. For reasons which he detailed, the existence of either of the three former conditions was very improbable; and there remained only the diagnosis of effusion of serum, which proved to be correct, except that, instead of being between the dura mater and bone, as Mr. Bell expected, it was within the dura mater.

ART. 29.—*Epileptiform Convulsions ; Left Hemiplegia ; Tumour in the Right Anterior Lobe of the Cerebrum.*

By J. R. BELL, M.D.

(*American Journal of the Medical Sciences*, July.)

A specimen was exhibited by Dr. C. B. Nancrede for Dr. J. R. Bell, at the Pathological Society of Philadelphia, taken from a woman aged

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-on-Tyne, August, 1870.

twenty-seven, who had been the subject of epileptiform convulsions, unattended by loss of consciousness. There was more or less headache in the intervals, but it was increased after each epileptiform attack. The pupils were normal, excepting when under the influence of conium, when the left pupil was largely dilated. Some time in November 1869, after a more severe attack than usual, which was attended with unconsciousness, entire loss of power over the left side, with the exception of the fingers, as well as impaired sensation, was found to have occurred. In the second week of December another convulsion was followed by total paralysis of the left side. Ten days afterwards she died from lung trouble but slightly comatose.

Post-mortem.—Both lungs were extensively diseased, with a cavity in one. There was inflammation of the membranes of the brain with easily separated adhesions along the longitudinal fissure and base. On the upper surface of the right lobe was an old adhesion. On making a section beneath this there appeared to be a cicatrix, upon dividing which a hardened mass was found which could be turned out of the softened brain substance. Immediately surrounding this mass the brain substance was softened and reddened. The rest of the organ seemed healthy, though more softened than could be accounted for by post-mortem change. A committee appointed to examine the tumour reported that it was irregularly lobulated, and measured about one and a half inches across its base; it was closely adherent to the under surface of the dura mater, the mass being imbedded in the brain substance. It occupied a portion of the upper and outer part of the right hemisphere, corresponding to the middle portion of the corpus striatum. Its sections presented two round nuclei of cheesy matter a third of an inch in diameter each, surrounded by firm greyish tissue. Microscopically examined, the central cheesy portions were composed of oval or irregularly triangular cells, containing much granular matter, but no true nuclei. A certain number of spindle-shaped cells were mixed with these, but no true stroma, nor could any vessels be detected in the cheesy nodules. There was also a large amount of free granular fat. The dense layers surrounding the nodules consisted of highly vascular fibro-cellular tissue, the vessels of which were large, tortuous, with thin walls and very imperfectly developed peri-vascular sheaths, and the cells chiefly large spindle-shaped connective tissue cells.

ART. 30.—*On the Nature of the Condition called Epilepsy.*

By J. THOMPSON DICKSON, M.D., M.R.C.P., Medical
Superintendent of St. Luke's Hospital.

(*British Medical Journal*, June 4 and 11.)

From the facts brought together in this paper, Dr. Dickson thinks we may fairly draw the following conclusions:—

1. The essential condition of epilepsy is a contraction of the cerebral small arterial vessels and capillaries.
2. The occurrence of the contraction is sudden.

3. The duration of the contraction is variable. It may be momentary, or it may continue as long as forty seconds.

4. The cause of the contraction is irritation, which may be direct, but is frequently remote, and the result of a variety of causes, all of which, however, tend to exhaustion, which in its turn secondarily brings about an irritable condition of the lesser vessels.

The phenomena corresponding with the conclusions adduced are—

1 and 2. With the contraction of the vessels we have loss of consciousness, always sudden, though the patient may have some warning of the attack through the medium of the irritation by which the attack is brought about.

3. The duration of the loss of consciousness will vary with the continuance of the capillary and arterial contraction. It may be so instantaneous as to appear only as a momentary vertigo, or even to escape observation altogether; or it may be most profound and of long continuance. There is no rule for determining any difference in the duration of unconsciousness between *le haut mal* and *le petit mal*; while the only essential difference between the two forms of the disorder is the muscular manifestation. In short, the two forms of epilepsy named have been used as extreme illustrations; but they are not by any means natural divisions of the disorder, if it be considered in the light of a class. In fine, epilepsy is loss of consciousness, the result of contraction of the cerebral smaller arteries and capillaries, induced by irritation, either direct or secondary to exhaustion. Epilepsy may be attended with an endless variety of phenomena, all of which are manifestations of an arrest of control. None of them are essential, and all are dependent upon accidental causes. All are secondary, with the exception of the “aura,” which certainly is not primary, and can only be regarded as an imperfect and uncorrected mental impression.

ART. 31.—*On Apoplexy.*

By J. M. DA COSTA, M.D.

(*Medical Diagnosis*, 3rd edit. pp. 844, Philadelphia.)

Dr. J. M. Da Costa, in his *Medical Diagnosis*, makes the following remarks in regard to the cause of apoplexy:—

“Now, is there anything at the time of the apoplexy, or after its most urgent symptoms have passed away, by which we can recognize whether the pressure on the brain results from a clot, a serous effusion, or from a turgescence of the cerebral vessels? And, again, do the morbid manifestations furnish any clue to the seat of the hemorrhage? With reference to the former question, all clinical experience forces us to admit that, in any of the states mentioned, the actual signs may be the same; and that we never can be quite certain of the non-existence of a clot. It is true that when the apoplectic symptoms abate rapidly; when thought, however confused, soon returns; when the limbs are not paralyzed, or are so but imperfectly and for a short time—we have strong reason for believing that congestion simply lies at the root of the

disturbance; that, in other words, the case is one of those called simple apoplexy. But it is never possible to give a positive opinion, since a clot near the periphery of the brain may occasion the same phenomena as those specified.

“And with regard to a rapid effusion of serum, the difficulty of distinction is quite as great, or even greater.

“The *seat* of the hemorrhage can ordinarily be detected with somewhat more certainty than the cause of the cerebral pressure; it could be detected with yet greater certainty, were it not that the extravasation so often takes place into an already diseased brain.”

ART. 32.—*Report of a Case of Tetanus.**

By JOHN W. OGLE, M.D., F.R.C.P.

(*The Lancet*, October 22.)

The patient, a healthy boy, got a bruise on the thumb. Three days afterwards he complained of stiff-neck, and vomited, and shortly afterwards became affected by opisthotonos. On the fifth day after the injury he was admitted into St. George's Hospital in a state of tetanus. He was put fully under the influence of belladonna; ice was constantly kept applied to the spine, and chloral was given at night to induce sleep. It was noticed that at no time did the sardonic smile exist, and there was never any trismus or (except on one day) difficulty in swallowing liquid food, such as wine, brandy, beef-tea, and beaten-up eggs. In this case the temperature and pulse were registered twice a day; and it was noticeable that almost throughout the patient's stay in the hospital the temperature was higher in the evening than in the morning, on one day reaching $102\frac{3}{4}^{\circ}$. About the fourteenth day after the injury the tetanic symptoms began to abate, and by degrees the belladonna and the chloral were discontinued, and also the application of ice to the spine. After about a month from the accident the patient left the hospital quite well, and has so continued ever since. Dr. Ogle suggested that possibly the examination of numbers of cases of tetanus might show that the temperature always increased in the evening, and that this fact might have value in diagnosing true tetanus from certain cases of affections of the spinal cord and its membranes, certain cases of hysteria, and strychnia and other poisoning. Dr. Ogle believed that the highest temperature arrived at in tetanus was recorded by Wunderlich, who described it as being 108° shortly before death; $112\cdot55^{\circ}$ at death; and $113\cdot56^{\circ}$ after death. He also alluded to a case of tetanus in which, after the attack, the patient was subject to great irregularity of the heart's action, with much discomfort and palpitation on exertion, as if the mechanism of the organ had been injured in some violent muscular effort.

This subject caused considerable discussion; Mr. Croft commenced it

* Abstract of a Paper read at a Meeting of the Clinical Society of London, October 14th.

by ingeniously dividing tetanus into two classes : one in which patients died, and the other in which they recovered. He professed scepticism as to the use of belladonna exclusively, but remarked in a subsequent stage of the discussion, that he had treated cases of this disease with the hydrate of chloral (and with nothing else), with apparently good effect.

Dr. Harley required evidence as to the irregularity of the heart's action in the case related by the author ; and attributed the favourable results of the belladonna treatment to the toxic effects of that drug.

Chunder Roy continued the discussion by saying that, according to experiences gleaned at Calcutta, he had come to the conclusion that in cases of tetanus death always occurred if the muscles of deglutition were affected ; but in the absence of this symptom, the prognosis might be favourable ; that, in consequence, symptoms only were treated ; that Indian hemp and opium smoking were most commonly used (the latter not, in these cases, producing constipation), and that the general result proved the opium treatment to be the best.

Dr. Barclay quoted Dr. Fuller as to the advantage of belladonna in the treatment of chorea, and said that with children it might be given advantageously in very large doses.

The Chairman recapitulated his experience as to cases of tetanus, the gist of which was that all drugs hitherto exhibited produced little or no appreciable effect. Of the cases which resulted in recovery, one was that of a boy in which nothing was done, another in which oxygen gas was employed continuously, and two others in which chloroform and other drugs were used. He also made some remarks as to treatment by Calabar bean, which were challenged by Dr. Anstie.

ART. 33.—*On the Pathogeny of Tetanus.**

By MM. ARLOING and LEON TRIPIER.

(*Gazette Médicale de Paris*, No. 25, 1870.)

“Those who have investigated from a clinical point of view the conditions under which tetanus occurs have arrived at very different results, a fact which seems to indicate that the causes that may produce this affection are multiple, or that none of them are yet known. However, it cannot be denied that this affection sometimes presents an epidemic character. Tetanus is frequently seen in private practice ; yet it is incomparably more frequent in hospitals. Moreover, it is not rare to observe it in two or three patients occupying the same part of the ward. Finally, one may meet successively several cases of tetanus in the service of one surgeon, and have no opportunity afforded of observing a single case in the other wards of the same hospital.

“The existence of the form of tetanus called spontaneous, though very rare in our country, can no longer be doubted ; medical journals publish one or two cases at least every year. Traumatic tetanus is very

* Communicated to the Société de Biologie.

much more frequent; sometimes it occurs in the first week, at others much later and when the surgical affection for which the patient was admitted into the hospital is partially if not completely cured. Then one learns sometimes that a window has been left open during the night; if the state of the temperature be then consulted it may be found either cold or hot, the air either moist or dry.

"Tetanus is more especially frequent after wounds of the extremities of limbs, and particularly crushing wounds of the toes or fingers; it is exceptional to see this complication after wounds of the head or cranium.

"In most instances the patients commence by feeling pains limited to the region which is the seat of injury. These pains soon extend, and reach more or less upwards along the region of the limb, following sometimes the anterior surface, sometimes the posterior surface, sometimes one or other side. These pains, which the patients compare to pricking or burning sensations, increase in intensity, and accompany the movements of flexion, extension, rotation, &c. The affection may remain restricted to these symptoms—tetanic cramps of operative patients; at other times the muscles of the jaws are affected—trismus; finally, the affection may be generalised and gain the muscles of the trunk—tetanus properly so called.

"With regard to the mode of production of tetanus there exist two principal theories in relation to the very nature of the causes that have been enumerated: these are the humoral theory and the nervous theory.

"In the former, one admits a preliminary infection of the blood by a pyogenic or some other substance; in the second, one believes that the nervous irritation is primary, and not produced through the blood.

"If the hypothesis of the humoralists be entertained, it might be supposed that by inoculating an animal with material taken from the wound of a patient afflicted with tetanus, or rather by making a transfusion of blood, the same affection may be produced. In order to verify this first point we have made a double experiment (injection of pus and blood). Rabbits and dogs were experimented upon, but the results were negative in both instances; the rectal temperature did not vary.

"To speak truly, this failure demonstrates that tetanus is not developed by inoculation from man to dogs; but it does not overthrow the theory of the humoralists. To be decisive the inoculation ought to be made upon man—a condition very difficult to realize, or, what comes to the same thing, from a tetanic animal to another animal of the same species; this is precisely what we have been able to do. The animal was a very vigorous horse, which had been attacked with spontaneous tetanus; about 200 grammes of its blood were collected from an opening made into the jugular vein; the fluid was received into a cooled vessel, and immediately afterwards injected into the jugular vein of another horse. The rectal temperature of this second animal taken before the experiment was about 38 degrees centigrade; on the second day it increased by about two- or three-fifths of a degree, and this augmentation was maintained for thirty-six hours. There was a complete absence of tonic and clonic contractions. This last result was a very

important one, and, although it be unique, we think that it enables us to say that tetanus does not consist in an infecting process with primary alteration of the blood, as is still supposed by Roser, Billroth, and other German authorities.

"The hypothesis of the neurists remains to be considered. For a long time attempts have been made to set up tetanus by pricking and bruising peripheral nerves. Laurent Descot in his work reports a certain number of experiments of this kind. Lately M. Legros has told us that he endeavoured to produce tetanus by constricting the nerve with a ligature. All these attempts remained fruitless.

"We have repeated these experiments and, moreover, have crushed the feet of frogs and rabbits. The animals died at different intervals without presenting any signs of tetanus. At the time of the experiments energetic contractions of the irritated foot could be made out, and even some stiffness, but these phenomena did not last longer than a few seconds. The rabbits always succumbed sooner than the frogs.

"We have also irritated the nerves of the limbs of dogs. We used forceps two or three times daily. Here again we noticed slight contractions, which ceased very soon after the removal of the irritant; the rectal temperature did not vary. These animals supported the experiments better than the rabbits and frogs. At the autopsy we invariably found a more or less extensive perineuritis, according to the time over which the irritation had been applied. The spinal cord was altogether normal.

"In the presence of these results, one might inquire whether frogs, rabbits and dogs are not refractory to tetanus, and indeed the affection has never been observed well marked in these animals.

"We, therefore, extended our experiments to the horse, in which animal tetanus is relatively frequent after castration.

"In the first place we irritated with forceps the plantar nerves in their metacarpal course. The experiment was followed by very strong jerking movements. The animals were violently agitated, but the convulsions were not durable. The rectal temperature increased by about two- or three-fifths of a degree.

"In one case the mercurial column mounted rapidly up to 42° C., and we were expecting the desired result, when we perceived an enormous fluctuating tumour seated on the haunch of the animal on which it was resting. There could be no doubt that we were in the presence of an abscess. The autopsy showed us that this was really a vast effusion of blood extending deeply into the pelvis. There were no traces of pus; but the peripheral tissues were thickened, indurated, and formed a kind of shell for the collection of blood. This infiltration, at once serous and plastic, was the index of an inflammatory process, and sufficed to explain the considerable increase of temperature that we had noticed.

"In despair of succeeding by mechanical irritation, we thenceforth employed continuous currents.

"In the first place we passed a thread through a metacarpal nerve of a horse. This proceeding, however, is bad, since by the second or third day the nerve becomes so altered that irritation no longer acts upon it. To obviate this inconvenience we made use of small pieces of metal bent at a right angle and contracted at their angles of inflection; one of the

limbs was introduced under the skin so as to rest upon the nerve, whilst the other projected between the lips of the wound united by means of suture; this contributed much better to ensure contact with the nerve and to fix the apparatus. Our two plates being placed, the one below, the other above the plantar nerve, we caused to pass through this nerve the current supplied by two or four elements of Bunsen's battery. In the latter case the pain was intolerable; the animal reared itself on its hind legs and threatened to fall. With two elements the pain was less acute, and tolerable; but from time to time very powerful contractions were produced in the lower segment and even in the shoulder of the irritated member; the animal was restless, drew deep inspirations, and finally the whole body was covered by profuse perspiration. Under these conditions the rectal temperature was not raised by more than one degree.

"Such were the results at which we arrived in acting directly upon nerves by means of mechanical and galvanic stimuli. But although we have not succeeded, it does not follow that the neurist hypothesis ought to be abandoned; we think, on the contrary, that attempts of this kind ought to be persevered in; moreover, one ought to seek for fresh agents of irritation.

"Before concluding, we will communicate some novel remarks relating to the prognosis and treatment of tetanus.

"It is generally believed that the elevated temperature in tetanus depends upon muscular contractions. We are of quite a different opinion; those elevated temperatures are not the general rule, and in some cases of subacute or chronic tetanus, in which the muscular contractions are very often extensive, the column is not higher than $38^{\circ}\cdot1$ or $38^{\circ}\cdot2$ C. It is a remarkable fact that if one examines the temperature before and after the spasm, there will often be found no difference, or the column of mercury will not be raised more than one-fifth of a degree. This seems to indicate that the elevation of the temperature, when it exists, ought not to be attributed to muscular contraction. The true cause is to be sought elsewhere, and we are inclined to attribute it to a lesion of the nerve centres. In fact, elevated temperatures are found in the most severe cases, whether extensive contractions exist or not, and whether the attack of tetanus be acute or chronic; and if in the acute form elevated temperature be the rule, it is precisely these cases that are so inevitably fatal.

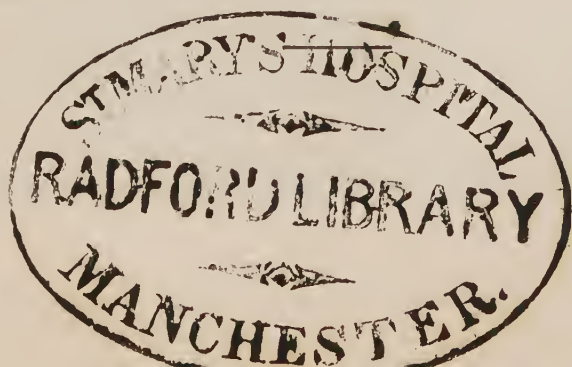
"With regard to the lesion itself, we will only remark that we have on several occasions been able to make out along the cord a very marked hyperæmia, and also evident nuclear proliferation. M. Bouchard has verified these results in two cases in which the tetanus was of the subacute form. According to Rokitsanski, this result is met with only in those cases in which the affection has lasted for some time.

"If we do not always find any morbid change appreciable through our actual means of investigation, we have, in these cases, no right to conclude that lesions do not exist. Our idea is that the affection commences in an irritation of the peripheral nerves, an irritation which may remain limited, or, on the contrary, may be propagated to the nerve centres. If this irritation be not very intense, the nerve centres will be simply excited, there will be but a slight elevation of temperature, and the

patient will get well; if the irritation be powerful, it will be associated with a veritable morbid change; the elevation of temperature will proceed rapidly, and there will be great danger to life.

“With regard to treatment, we think that neurotomy is the most rational measure that one can employ. It is necessary, however, to have recourse to it as speedily as possible. Moreover, the section ought not to be confined to a single nerve, as was recommended long ago, but should involve all the nerves of a limb, considering that, as our experimental researches upon sections of the peripheral nerves have established in a peremptory manner, so long as a nerve of the limb remains intact the transmission continues to be made. We have already reported a case, in which the patient, after a gun-shot wound of the root of the thumb, felt cramps gradually extending up the limb, which were afterwards associated with exaggerated flexion of the hand upon the forearm, and the forearm upon the arm; in the course of a few days trismus supervened. The median nerve was cut in the middle of the upper arm, but without any good result, as the muscles of the trunk soon afterwards became involved.

“The patient recovered; we imagine, however, that no one will put this happy issue to the account of the section of the median nerve. We may note in passing that in this case the temperature, which was taken with much care, remained almost the same during the whole course of the affection—that is to say, it was relatively but little elevated, a fact in support of the opinion already enunciated. Quite recently, M. Ollier has sent to us another case, which favours equally well our point of view. The case, like the former, was one of gun-shot wound of the thumb. The patient, when almost well took a walk; scarcely had he returned when the limb was seized with painful cramps, and shortly afterwards trismus occurred. M. Ollier, who was called in on the sixth day, immediately cut through the median nerve; as the pains persisted he divided, a few hours afterwards, the ulnar nerve; and then, as the pains still continued, he decided on the same day to cut the radial nerve. From that time the patient did not complain of any pain in his limb; a marked amelioration seemed to have been brought about, when he was carried off in an attack of symptoms which M. Ollier compared to a kind of acute mania. One cannot say what would have happened if complete section of all the nerves had been made at the commencement of the affection. Whatever may be its effects on the course of tetanus, the operation we recommend is free from danger, since at the end of a few months there is complete recuperation, both of sensation and of motion; it is decidedly an incomparably less serious proceeding than that of amputation proposed by Larrey; on the condition, however, that the section be practised as near as possible to the origin of the limb, in order to avoid more surely the anastomoses.”



ART. 34.—*Disseminated, Diffuse, or Multilocular Sclerosis of the Brain and Spinal Cord.*

By MEREDITH CLYMER, M.D.

(*New York Medical Journal*, May and June.)

Dr. Clymer, the author of this paper, defines sclerosis as over-growth (proliferation) and transformation of connective tissue, with consequent wasting of the proper functional elements of the part. The following is his definition of disseminated sclerosis of the brain and cord :—"A disease of the cerebro-spinal centres, of gradual invasion, beginning with muscular weakness of one or both lower limbs, subsequently extending to the upper, and, sooner or later, passing into complete paralysis, which may in time affect, in some degree, the muscles of the head, neck, face, pharynx, and tongue. No constant derangement of cutaneous sensibility; the univocal symptom, tremor in the implicated muscles, which happens only when any voluntary movement is attempted, and ceases in a state of rest; frequently nystagmus, attended in the latter stages with cramps; and permanent rigidity and contraction of the palsied members; of probably diathetic origin; slowly and surely progressive in its course, and consequently of fatal termination; the anatomical characters being patches of corns of sclerosis, irregularly disseminated in the brain and spinal cord." The author has collected and tabulated sixteen cases of this disease from various authors, and analysed them with reference to age, sex, anatomical character, disorders of mobility, sensibility, special senses, intellect, and the cause of death. The paper is of too great length to analyse, but we subjoin the following abstract of the section on differential diagnosis.

Paralysis agitans is the disease with which disseminated sclerosis of the nervous centres has been most frequently confounded. Paralysis agitans is a disease of declining years. Diffuse sclerosis of the brain and cord is a disease of adult life. The invasive stage is somewhat alike in both. It is often so imperceptible that the patient cannot fix the exact period of its commencement. In both there are crawling sensations and numbness, but in the neurosis these are felt in the arms; in the organic disease, in the legs in the initial stage. In paralysis agitans a tendency to trembling is an initial symptom; in sclerosis tremor invariably follows paralysis limb by limb. The muscular weakness of paralysis agitans begins in one arm or both, and then extends to the legs, and only passes into true paralysis, and that rarely, in the final stage; in sclerosis one or both lower limbs are first attacked with paresis, and ultimately the patient becomes perfectly paraplegic. The gait in the two diseases is diacritic. In paralysis agitans, the patient, after balancing and oscillating, starts with the head and trunk bent forwards on the toes and forepart of the feet, with short quick steps, and to maintain the centre of gravity thus displaced, goes trotting and hopping along at almost running speed, with one or both arms and wrists semiflexed and closely pressed to the sides. In sclerosis the gait is that of paraplegia. In paralysis agitans tremor is the earliest phenomenon; it is incessant; and but little modified by rest or motion, or in the developed stage, by sleep.

In sclerosis it is consecutive to the motorial troubles, and it is never spontaneous, but is always provoked by, or follows upon, muscular movement. Nystagmus is constantly present in sclerosis, never in paralysis agitans. The articulation in a sclerotic is slow and scanning; in paralysis agitans it is embarrassed and indistinct. In paralysis agitans intellect is unaffected until near the close; in diffuse cerebro-spinal sclerosis it is mostly weakened from an early period. The characteristic deformities of shaking palsy, described by Parkinson and Charcot, cannot be confounded with the permanent contraction of late muscular rigidity, which is constant towards the end of diffuse sclerosis. There are some symptoms common to multilocular sclerosis of the anterior or antero-lateral columns of the cord and locomotor ataxy (posterior sclerosis) in the forming stages of both disorders. In both there are tinglings, occasional numbness, and ready fatigue after slight exertion. In locomotor ataxy these are accompanied by ocular troubles, as weakness of sight, defective accommodation, strabismus, ptosis, double vision, &c. In the special form of disseminated sclerosis these are wanting, and if they occur in the cerebral, or cerebro-spinal form, they are persistent; in locomotor ataxy they are generally temporary. The pains of the ataxic are rare in disseminated sclerosis. The course and physiognomy of the two diseases when fully developed are sufficiently distinct. But if the posterior columns are invaded by the sclerotic patches as well as the anterior and antero-posterior, the signs of the two diseases will co-exist, although by careful examination they may be separated.

ART. 35.—*On the State of Muscular Contractility judged Comparatively by means of Continuous Currents and Currents of Induction in a Certain Number of Cases of Paralysis, and on the Consequences which flow from this.**

By M. CH. ROBIN.

The comparative study of muscular contractility, by means of continuous and inductive currents, in cases of paralysis of the deltoid, either essential or consecutive to an eruptive fever, or a traumatism, in cases of the so-called rheumatic facial paralysis, and in cases of saturnine paralysis, gives the following results:—

1. In muscular paralysis of the kind just mentioned, continuous currents at their opening and closing excite the contractility of the paralysed organs at a time when the inductive currents, however great their intensity, cannot excite the same contraction.

2. In the same class of cases in which when a cure is produced the muscle previously stricken by paralysis contracts under the influence of the will, inductive currents will still be unable to produce muscular contractions in an appreciable manner; whilst the continuous currents, on the contrary, act in a very characteristic manner at their opening and closing.

* Communicated to the Académie des Sciences, May 30, 1870.

3. The inductive currents do not represent the best mode of stimulation proper to put in play the contractility of paralysed muscles, and there is an immediate necessity for reforming the proposition current in science—that the *electro-muscular irritability is not necessary for mobility*.

4. It is necessary also to distinguish with regard to electric exploration two kinds of electro-muscular contractility—the farado-muscular contractility, and the galvano-muscular contractility. The first denomination represents the reaction of the muscles under the influence of inductive currents; the second the reaction of muscles under the influence of continuous currents.

5. Finally, the importance of the rôle of inductive currents in certain forms of paralysis with regard to diagnosis, prognosis, and treatment ought to be considerably reduced by the knowledge of the preceding facts.

ART. 36.—*On Shaking Palsy.*

By B. BALL, M.D., Professeur Agrégé in the Medical Faculty of Paris.

(*Medical Times and Gazette*, Oct. 1.)

In a clinical lecture on shaking palsy, delivered at the Hôpital de la Pitié, Dr. Ball remarked that English observers were the first to bring this disease to notice, but that of late the subject has been extensively studied in France, and that several new points have been brought to light, particularly by Dr. Charcot and his school at the Salpêtrière.

Shaking palsy presents two forms of invasion—the slow and the rapid form. The early progress of the disease is in most cases insidious. The trembling is limited to one hand, to one foot, or even to a single finger, sometimes the thumb. After a certain length of time, it extends to other parts of the body.

The disease adopts, in the majority of cases, the hemiplegic form, and the patient trembles for a long time on one side only. In other cases it exhibits the paraplegic form, and the lower limbs alone are agitated by those convulsive movements. Lastly, there exists a third and very unusual form, in which an intercrossing of the symptoms is observed—*i.e.*, the right hand and left foot tremble, or *vice versa*. But in general the four extremities become equally affected after a while. The head is spared, as a rule, and Dr. Charcot has never met with a single exception; our male patient, however, is an instance to the contrary.

Again, the commencement of the disease may be marked by symptoms of a different character. Pains, and sometimes intense pains, are felt in the diseased limbs, along certain nerves, followed by contraction of various sets of muscles. It occurs (1) in the limbs themselves; (2) in the trunk; (3) in the neck, where it chiefly affects the sterno-mastoideus. Our female patient affords us an example of this latter case.

Such are the initial phenomena of shaking palsy; but the disease, once fully developed, is characterized by three prominent symptoms—trembling, rigidity, and pain. Let us examine each of these separately.

The trembling of shaking palsy is oscillating and rhythmical; it is

usually exaggerated by all voluntary exertions and by any violent emotion. But by far the most important feature is its permanency. The patient trembles at all times, even when in a state of perfect rest; of course, the extent of the oscillations is far less considerable than when he is engaged in active occupations, but there is always a certain degree of agitation in the limbs. If, however, the patient's arm is placed upon a flat board, so as to rest there perfectly for a moment, a temporary cessation of the movements may be obtained; but this only lasts a few seconds, and the trembling soon reappears. *Sleep* and *anæsthetics* are the only means of arresting these oscillations; and herein the disease differs essentially from chorea, in which the patient is often agitated although he is asleep.

The head and face, as we have already stated, are generally exempt from these disturbances; but the features of the patient, though there exists no paralysis of the facial muscles, present an unmeaning and blank expression. Lastly, it may be well to state that nystagmus—that particular convulsive motion of the eyes so frequently met with in other nervous affections—is sometimes absent.

At the same time, when the disease has lasted for a certain period, the patient's muscular strength begins to fail, and the least exertion becomes fatiguing. The limbs move in a peculiarly stiff and ungainly manner, as if there existed an ankylosis of all the joints, and this, by a superficial observer, might be mistaken for paraplegia, with contraction. Although the patient is weaker than when in health, there is no real paralysis in the case, and the dynamometer easily enables us to measure the degree of strength still remaining.

Another symptom exhibited by several patients is a certain slowness of speech: they articulate distinctly, but with a marked slowness.

Lastly, intense pain is sometimes felt in the diseased limbs; at other times, various perversions of sensibility take place. Dr. Charcot has found certain patients complain of an intense heat all over the body, so that in the midst of winter they could hardly bear their clothes on—a sensation which, of course, is not accompanied by any actual increase of temperature. The fact has been fully proved by thermometrical examinations.

Another and most singular symptom of shaking palsy is the impulsion experienced by several patients, which compels them either to walk rapidly onwards or else move backwards contrary to their will.

This singular tendency of the patient to rush forward has been sometimes attributed to the forced inclination of the body. The patient, as Trousscau used to say, runs after his centre of gravity, which escapes him (*le malade court après son centre de gravité qui se déplace*). But this ingenious explanation will scarcely account for the cases in which the patient, instead of running forwards, is urged to the rear.

This strange phenomenon must, therefore, be looked upon as a perversion of that great faculty of the nervous system which, co-ordinating all our movements, endows them, independently of the will, with a majestic harmony.

Apart from the pains and the burning sensation of heat already mentioned, there seldom ever exists any disturbance of the sensorial functions; and this is one of the leading differences which separate shaking

palsy from locomotor ataxy, in which latter disease the above phenomena are very prominent. The symptoms which we have described, however distressing, do not endanger life itself; and the disease, therefore, may last for years; but the climax is reached at last, and the patient falls into a state of permanent helplessness.

The hands and feet are in many cases utterly deformed, exactly as in chronic rheumatic arthritis. The consequently increasing weakness of the patient, and the racking pains which affect the limbs, compel him to remain a helpless cripple in bed, unfit to move without assistance and hardly able to take his own food.

Lastly, as death approaches, a symptom of solemn importance makes its appearance. The tremulous motion, which for so many years had agitated the patient's limbs, ceases suddenly. In this respect we find a singular analogy between the ultimate period of shaking palsy and that of other painful affections. Observe, for instance, the last moments of a patient dying with puerperal peritonitis: while the abdomen is inflated, the diaphragm pressed upwards, and the lungs compressed so as hardly to allow space for breathing, the patient is free from all dyspnoea, and feels comparatively better—in fact, the nervous sensibility which made her feel the pangs of asphyxia is now exhausted, and nature casts a veil over the last painful moments of life.

It seems natural to suppose that so singular and marked a disease should be attended with equally well-marked anatomical disorders; such, however, is not the case, and Dr. Charcot's diligent investigations have proved that in many cases the naked eye can discover no lesion whatever in the nervous centres, and that, where any such do exist, they are far from presenting the same character at all times. The morbid changes described in the pons varolii by some anatomists only exist in a very limited number of cases, and everything leads us to believe that they are rather the *consequence* than the *cause* of the disease. No doubt some material changes do exist, but they have escaped our investigations, and up to the present time shaking palsy must be classed with those essential disorders of the nervous system the seat of which, anatomically speaking, remains unknown.

We must now establish a diagnosis of this affection, and distinguish it from all other neighbouring diseases.

The tremulous motion, which is evidently the most prominent symptom of shaking palsy, belongs to it in common with several other disorders of the nervous system. But an important difference must here be observed. There are two distinct kinds of trembling, which Galen already described under the names of *τρόμος* and *πάλμος*; the one consists in uninterrupted agitation of the limbs, the other only occurs in voluntary motion. In the first case, the patient, whether at rest or not, always trembles; in the second, he only trembles when exerting his muscular power. The type of the first may be found in chorea, and a good example of the second is afforded by mercurialism. Now, shaking palsy belongs to the first, and not to the latter class; and this, gentlemen, is the touchstone of our diagnosis. I will not attempt to give here a complete description of all the diseases which might be mistaken for this affection; but there are a few to which I would direct your

attention : locomotor ataxy, chorea, alcoholism, metallic tremor, and the cerebro-spinal form of *sclérose en plaques*.*

In locomotor ataxy, the chief symptom consists in a loss of the power which co-ordinates our movements, and this does not exist in agitating paralysis. True, we find in this latter disease an impulsive tendency, which propels the patient forwards or impels him backwards; but this symptom, never yet observed in locomotor ataxy, is totally different from that peculiar incoördination which so strongly marks this affection. Moreover, the tremulous motion, by far the most predominant symptom in the one case, is entirely absent in the other; and no attentive observer can possibly mistake the irregular movements of ataxy for the characteristic tremor of shaking palsy.

In chorea we find movements of a more irregular order; and, as Dr. Charcot observes, the general form of the intended movements is preserved even in the worst cases of shaking palsy, whereas in chorea the perversion is so great that the patient's intentions are sometimes completely frustrated. In short, the movements of chorea have not inaptly been termed *des grimaces de la motilité*.

As to the effects of alcohol and mercury upon the nervous system, the tremulous motion which they produce only resembles shaking palsy in its earliest stage, and the ulterior progress of the disease leaves no room whatever for doubt. Besides, the trembling alluded to is *intermittent* and not *continuous*—a characteristic difference, the full importance of which can be readily understood.

Tremor senilis generally affects the head and lower jaw—a circumstance not observed in shaking palsy. Besides, the progress of the disease is entirely different; the tremulous motion of old age being a mere infirmity, while shaking palsy, after a long succession of phenomena, ends in death, according to the process we have already described.

There is only one disease which in its confirmed state can be mistaken for shaking palsy—a disease hitherto little known, but the clinical symptoms of which the school of the Salpêtrière has lately brought to light—we allude to that singular alteration of the nervous centres actually described under the name of *sclérose en plaques*.

This affection, taken in its cerebro-spinal form, occasionally exhibits (for inexperienced observers) all the symptoms which we have been describing; the principal difference which distinguishes it from paralysis agitans is the intermittent character of the tremulous motion. The trembling in disseminated sclerosis only occurs in *spontaneous motion*. The reverse is the case in shaking palsy; the *onus* of diagnosis, therefore, rests chiefly upon this difference. We might observe that the lower limbs are frequently paralysed and rigid, through muscular contraction, in sclerosis, while, in the disease we have just been studying, no real paralysis ever exists. We might also remark that muscular weakness generally precedes the tremulous motion in sclerosis, that the impediment of speech closely resembles that of general paralysis, and that the patient is frequently affected with nystagmus—a symptom

* This latter disease not having been hitherto described (as far as our knowledge extends) by English observers, we are at a loss for an equivalent to the French term, *sclérose en plaques*.

which, as we have noticed, is wanting in shaking palsy. But the importance of the subject induces me to set it aside for a future investigation.

As regards prognosis, we have already stated what are the patient's prospects. Life is not threatened with immediate danger, and the disease may go on for twenty or thirty years before the fatal issue arrives; but to cure it is almost an utter impossibility. It should be borne in mind, however, that the patient's condition may frequently be improved by judicious treatment, and that the most painful symptoms may be relieved for a considerable period of time.

The causes of shaking palsy are but little known. Violent emotions—anger, fear, surprise, on one hand, and cold on the other—are supposed to be the most active factors in the production of the disease. It appears also that surgical injuries, especially those which involve certain nerves, have occasionally brought on the complaint.

As to the influence of age, we can only say that senility does not seem to possess any special influence in this case. The classical period of shaking palsy lies between forty and fifty; both our patients fall under that age.

The treatment of shaking paralysis is, like that of most essential diseases of the nervous system, in the highest degree unsatisfactory. Without attempting to enumerate the various methods which have been proposed by authors, we shall be content with stating that nitrate of silver—whatever its efficacy may have been in other affections—is here positively injurious, and that galvanism, according to German authorities (Remak), has occasionally been found serviceable.

There is, however, a new substance loudly clamouring for admittance into the field of therapeutics—viz., *chloral*—which is supposed to possess properties holding a place between that of opium and of chloroform. We are consequently inclined to administer the hydrate of chloral to our patients by way of experiment, and whatever the result may be, we shall certainly have lost no ground by making this last attempt.*

ART. 37.—*The Etiology of Paresis.*†

By W. H. O. SANKEY, M.D., Cheltenham.

(*British Medical Journal*, September 24.)

The author was disposed (excluding cases of imperfect development, climacteric decay, and epileptic mania) to class the cases met with in asylums into (1), ordinary insanity in its various stages; and (2) general paresis. In patients of the first class there has been a stage of depression of spirits, followed by morbid apprehension, alteration of the moral faculties, illusions, and disorders of intellect. They have also shown either restlessness and violence, or dulness and stupor; but no form of

* A male patient under Dr. Ball's care has been considerably benefited by this treatment, which, however, has been found entirely powerless in the case of a female subject.

† Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-on-Tyne, August, 1870.

paresis. In many cases of paresis, before any motor defect is present, there are great garrulity, exuberant spirits, alteration of character, sexual impropriety, &c. Dr. Sankey believed that in ordinary insanity the nutritive processes of the cerebrum are affected through the blood; and that in general paresis there is a direct effect on the nerve-tissue by mental or physical shock acting on the nerve-centres. In ordinary insanity there is, primarily, distinct disturbance of the digestive functions, and disease of the blood-making organs is found after death; while in general paresis there is no such condition. In cases of ordinary insanity of long standing, he had found decided hypertrophy of the coats of the smaller arteries of the brain; while in general paresis there is no such thickening, but the small arteries are contorted and varicose. He believed that the hypertrophy of the arteries in insanity was to be explained in the manner suggested by Dr. George Johnson in his paper on hypertrophy of the arteries in renal disease; while, in paresis, the nervous plexus of the vessels was paralysed in common with all other parts of the nervous system, and consequently the vessels could not resist the influx of blood, and were thrown into a varicose state.

ART. 38.—*On General Paralysis of the Insane following Local Lesions of the Brain, especially Cerebral Hæmorrhage.*

By Prof. LEON COLIN.

“Among mental maladies general paralysis is probably the one the pathological anatomy of which has been most clearly established in recent time, especially by the researches of MM. Calmeil and Bailarger. Its multiple lesions seem to have been almost completely recognised, whether the first rank in importance is to be given to induration of the white substance, or the morbid change of the grey substance is to be regarded as the predominant lesion, in which case the malady is designated peri-encephalitis.

“In his remarkable treatise on the inflammatory affections of the brain, M. Calmeil has specially insisted upon the preliminary phases of the peculiar lesion of general paralysis, and demonstrated with authority, justified by a mass of indisputable facts, the influence of previous congestions of the cerebral vascular system upon the development of this affection. He has proved that congestive fluxions of the brain, whether they be generalized in the encephalic mass, or whether they be limited, on the contrary, to certain special points of the nervous centres, may lead to either quite local lesions; circumscribed encephalitis, with blood-clot or ramollissement of the nervous element, or, on the contrary, diffused encephalitis, especially peri-encephalitis, extended over the whole surface of the convolutions.

“This community of origin between the circumscribed cerebral force and the diffused morbid changes peculiar to general paralysis, apparently seems to render sufficiently frequent the simultaneous development in the same subject of partial paralysis of cerebral origin, espe-

cially hemiplegia, on the one hand, and the intellectual and muscular symptoms of paralytic insanity on the other. 'A previous lesion of the brain, as apoplexy or ramollissement, may,' says Marcé, in his *Traité Pratique des Maladies Mentales*, 'become the starting-point of general paralysis. The lesion, circumscribed at first to the nervous centres, extends consecutively to the cortical layer, and then on an incomplete hemiplegia of old date are implanted all the symptoms of paralytic insanity. In these cases, in addition to the central cicatrix, one finds at the autopsy softening of the cortical layer with adhesion to the meninges.'

"This coincidence or this succession of the two affections is, however, far from common. In the majority of hemiplegic patients, the apoplectic focus, or the ramollissement, remains without influencing the peripheral circulation of the nerve-centres, and long years may pass without the slightest appearance of trembling or perversion of the intellectual faculties. In my practice in the Val-de-Grace, into which are so frequently admitted patients attacked, some with hemiplegia consecutive to apoplexy or cerebral ramollissement, others with general paralysis, I have not seen these two morbid types united in the same subject. There exist, without doubt, under the conditions of structure, development, and circulation, according to individuals, special conditions which excite in each of these more special morbid tendencies towards this or that point of these organs.

"Thus I have been surprised to see, within a period of two months, three patients who had been attacked with the two affections simultaneously.

"In one, who had been a hemiplegic for four months, there was manifested special trembling of the lips, tongue, and hands, at the same time, hypochondriacal delirium, which frequently marks the invasion of paralytic insanity. In the two other patients, who had been hemiplegic for several months, the characteristic trembling also appeared, but was accompanied by the form of monomania peculiar to general paralysis. The following is the history of one of these patients:—

"M. X——, aged thirty-five years, an officer in a regiment of the Imperial Guard, presented all the attributes of a vigorous constitution and a sanguine temperament. His manner of living had been always conformable to that of the majority of his military colleagues, and he had not been more addicted than the others to alcoholic and sexual excitement.

"During the night of December 24, which he passed in the company of a woman, M. X—— had an attack of cerebral congestion, with loss of consciousness, and temporary loss of power of the limbs of the left side. In the course of a few days he was able to return to his duty.

"Fifteen days after this first attack, whilst taking part with his regiment at a review, he was again attacked with cerebral congestion. On this occasion the symptoms of paralysis on the left side were more complete; these became still more pronounced day by day, and the hemiplegia became permanent.

"After a sojourn of three months at the hospital of Gros-Caillou, where he was treated principally by derivatives and bleeding, he returned

to his family as a convalescent in the month of March; he still continued his former treatment, which consisted in aloetic pills, Pullna water, pediluvia, and the actual cautery to the neck.

"From this last epoch dated the mental symptoms, the details of which have been given to me by Dr. Subert, of Nevers, who had occasion to see the patient during his leave.

"At first the symptoms consisted in simple nocturnal hallucinations, as hearing many voices; then the idea of constructing a chapel after his cure; finally, the monomania of returning to Paris, accompanied by erotic ideas manifested in the presence of serious persons most deserving of respect. At the same time gluttony was manifested, and an illusion as to the existence of some explosive substance, as an infernal machine, in the left foot.

"At last his family finding that they could not take further charge of the patient, who was becoming more and more agitated, had him taken to Paris. At the end of June he was admitted into the Hôpital du Val-de-Grace. During the short time which M. X—— passed under our care, we observed the co-existence of hemiplegia and the mental symptoms of general paralysis such as had been observed by Dr. Subert. The patient wished to adorn the gardens of the hospital with some figures, a chapel, a dancing-room, a restaurant, &c.; he had an impression so exaggerated of his physical strength, that he was constantly getting up, without taking count of his hemiplegia, and as he refused assistance, fell heavily to the ground. He was then removed in this condition to a Maison de Santé."

ART. 39.—*Cases of Abdominal Neuralgia; Clinical Remarks.*

Under the care of Dr. HANDFIELD JONES, at St. Mary's Hospital.

(*The Lancet*, November 19.)

The following series of cases is interesting as illustrating the diagnosis and treatment of a disease that is not always easy to distinguish from other affections in which pain is referred to the abdomen, especially peritonitis, lead colic, and hysteria. The points on which Dr. Jones chiefly insists appear to be—1. That the region of the abdomen, probably its peritoneal lining, is liable to suffer from neuralgia and hyperæsthesia, such as prevail in other situations more notoriously prone to this malady. 2. That such neuralgic affections may very closely simulate peritonitis. 3. That they may be attended with high temperature. 4. That they may possibly pass into peritonitis. 5. That, in their treatment, opium (preferably in the form of enema), tonics, and restoratives, prove to be successful remedies.

The first case is that of M. W——, aged forty, a married woman, who was admitted on the 9th September. She stated that three days previously she had been seized with pain in the lower part of the abdomen and the hips, so violent as to draw her double; since the day before admission it had been gradually subsiding, but with occasional aggrava-

tions. Whilst the pain was at its worst the abdomen had been so exquisitely tender that she could scarcely draw her breath, and whilst sitting up she had felt sick. On admission she flinched violently when the left side of the abdomen was touched, and she felt pain on coughing or drawing a deep breath; when she turned on to the right side she experienced a feeling of dragging in the left; the tongue was thickly coated with white fur; the pulse was 78, and not very weak; the temperature 99.3° ; there was no blue line on the gums. The right side of the abdomen was resonant, the left dull, and these sounds were not altered when she moved on to her right side. She had no appetite, but was very thirsty; the bowels were habitually confined; the urine was very red, and passed with pain; there was also pain on passing her motions; the catamenia had not appeared for six weeks, but she had a profuse leucorrhœal discharge. There was no history of lead poisoning. She said that she lived over some stables, and had experienced a similar pain several times during the past three or four years; she felt very weak, and the least thing threw her into a "fainting perspiration." She had not been able to sleep during the previous night because dreadful sights appeared directly she closed her eyes, "blood, and all that sort of thing, mice running about," &c. The bowels were first relieved by an aperient, and then an enema containing twenty drops of laudanum was administered, and followed by a great abatement of the abdominal tenderness. The treatment was then made to consist of one-twentieth of a grain of strychnine, one minim of nitric acid, and ten of chloric ether, in an ounce of water, four times a day; with simple diet, a pint of milk, and four ounces of sherry. On the second day her sleep had been disturbed in the same manner as before; the abdomen was quite soft and only slightly tender. On the third morning the sleep had been sound and uninterrupted; the bowels were relieved by an enema, and the diet was changed to chop, pudding, and porter, the medicine to twenty grains of the saccharated carbonate of iron, three times a day. On the seventh she was still improving, but, on getting up, the pain and feeling of faintness returned slightly. In a few days more she was discharged.

The second case was that of A. N——, aged twenty-six, a married woman with three children. She was admitted on 10th September, and gave the following account of herself:—She was in charge of a house which had just been painted, and smelt strongly of paint and varnish, when, three weeks before admission, she was attacked with severe headache, which, two days later, was replaced by an abdominal pain, which she described as having been "frightful" in severity, and since its onset she had been unable to lie on either side, or to obtain sleep at night. She had been feverish and without appetite. No other inmate of the house had been out of health. She looked thin and anæmic, had a copious leucorrhœal discharge, and was suffering such intense pain that six leeches were immediately applied to the abdomen, and followed by poultices. On the 13th Dr. Jones found her very weak, complaining of great pain on the left side of the abdomen, but lying with the legs extended; the left flank of the abdomen was dull on percussion; the other regions were resonant. The pulse was 102, not very weak; the temperature 102.5° ; the tongue moist. There was no flush on the cheeks nor eruption on the abdomen. The bowels had not been open

for two days; the appetite was good; the breasts did not secrete much milk. She was ordered an enema of castor oil, to be followed, after the action of the bowels, by a simple enema containing twenty drops of the tincture of opium; also a draught of four grains of carbonate of ammonia and one drachm of tincture of bark, in an ounce of decoction of bark, three times a day, with a generous spoon diet. On the fourth morning she awoke in great pain from a sleep which had lasted from early in the previous evening. The pulse was 105; the temperature 103.4° . The abdomen was fomented, and another opiate enema administered, and she was ordered twenty grains of the saccharated carbonate of iron thrice daily, in addition to the draught. On the seventh day the pulse was 88, the temperature 99.7° , and pain of a much less severe character recurred from time to time. The diet was changed to one of meat and porter. On the eleventh day the temperature was 100° , and in consequence of copious night-sweats, the ammonia-and-bark draught was abandoned for one containing four grains of quinine. Subsequently a chloride-of-zinc injection was made use of to check the leucorrhœa. Twenty-eight days after admission she only complained of an occasional return of pain towards evening. No blue line was observed at any time on the gums.

The third case was also a woman, thirty-three years of age, and single. She stated that she had been indisposed for a fortnight, and had kept her bed for a week. The first symptom had been pain in the upper part of the abdomen, all round it, and in the back, great pain also followed on taking food, and was relieved by vomiting. At the time of admission the pain seemed to be violent; she was found to be bending herself down and moaning; the tongue was moist, and tolerably clean; the pulse 80; the temperature 97.5° F. The abdomen moved a little in respiration, but the muscles were at times very hard and tense; there was no eruption. She had no appetite, but was very thirsty. On inquiring into her history, it was elicited that seven years before she had lived in a house whilst it was being painted, and that she had suffered at the time some nausea; also, that two years before admission she had suffered for a short time a somewhat similar kind of pain. The teeth were found to be so encrusted and soiled with tartar that it was difficult to determine whether or not a blue line was present. She also complained that for a year she had had pain about the rectum, accompanied by a frequent desire to defecate; but she had never experienced any pain during the passage of her motions. The uterus was found to be reclined, the fundus lying near, if not upon, the rectum. She was first ordered a grain of opium every four hours, ice to swallow, poultices to the abdomen, and a subcutaneous injection of ten minims of solution of opium; but neither these remedies, nor an opiate enema which had been administered, were found on the following day to have afforded relief. She was found to be twisting and writhing in bed, although the abdomen bore pressure fairly well. The pulse was 72, and not weak; the urine clear and of high colour. She was then ordered a drachm of tincture of valerian and four grains of carbonate of ammonia, in an ounce of infusion of valerian, thrice daily; but she obtained no sleep during the following night, severe pain being excited every time she moved; and, in the morning, the abdominal walls were found to be hard and retracted. The

temperature was 98·9° F. An opiate enema was followed by relief, and a grain of opium was ordered to be taken every two hours. On the eighth day two grains of iodide of potassium were added to the draught. On the fifteenth she was ordered, in addition, twenty grains of saccharated carbonate of iron, thrice daily. On the sixteenth day the pains became regularly paroxysmal, returning morning and evening at half-past ten o'clock. On the same date she began to sweat a great deal at night; ten grains of quinine daily, in two evening doses, reduced the severity but not the duration of the attacks. The amount of quinine was then doubled by giving four doses daily instead of two, and by the twentieth day she was free from pain and improving in general condition. After this the pains returned slightly, and a treatment as for lead colic was essayed, but, proving unsuccessful, was changed for citrate of iron and quinine, under which they soon began to disappear; and within little more than a month from the date of admission, though the patient suffered occasional returns of pain, the abdomen was soft and mostly free from tenderness on pressure, and she was discharged at her own request.

These cases, Dr. Jones said, were fair specimen cases of a disorder which is by no means rare, at least among the poorer classes. In calling it "abdominal neuralgia" he had followed, unwittingly, the example of the late Dr. Addison, who had written a very full and interesting paper on the same disorder in connexion with uterine irritation. The term might be thought too vague, but he preferred it to any other, for the reason that it did not appear to him that any organ is specially affected, and that any part of the region in question might be attacked. If he were pressed to localize the disorder more exactly, he should name the peritoneum as the most probable seat, partly on account of the quality of the pain, partly because this membrane is coextensive with its situation. Romberg had described a hyperæsthesia of the mesenteric plexus, but the description he gave of it seemed more applicable to colic than to the malady they were considering. A perusal of the cases, Dr. Jones thought, indicated that the resemblance of the symptoms, especially the pain, to those of the peritonitis, was quite close enough to make the diagnosis sometimes sufficiently difficult. Dr. Addison had said that the pain occasionally attacked the whole of the belly, exactly simulating acute peritonitis, and that he knew of no more puzzling disease. The points which would prove most serviceable as guides were the previous history, the temperature, the posture, the respiration, the pulse, and the physical signs. If the patient appeared to have suffered from any cause of exhaustion, such as lactation, profuse leucorrhœa, over-exertion, semi-starvation, or the like, a neurosis was a more probable result than inflammation. If the disease was of long duration, such as from two to three weeks or more, and the pain persisted with severity, especially without the development of any other symptom, it could not be peritonitis; the same would probably apply if there was a history of several similar previous attacks. If the temperature underwent no rise, it afforded strong evidence against the existence of inflammation, though a high temperature could not by any means be taken to prove the converse. The second case indicated a temperature befitting typhoid fever, and if was only the sequel which conclusively showed that the pain was

purely neurotic. It had been supposed that neuralgia could not coexist with pyrexia, but he had recently seen a case of ephemeral fever in which the patient complained of agonizing pain in the limbs, and the temperature rose to 103° ; on the day following the pain had greatly abated, and the temperature was found to be normal. As regarded posture, the peritonitic patient was said to lie in a fixed position, instinctively avoiding the slightest movement; the neuralgic often turns and writhes about: the former abstains from using the diaphragm in respiration, the latter does not, or, at any rate, not to so great an extent. After a few days the physical signs would probably afford decisive information. The dulness in depending parts of the abdomen, due to effusion, is not present in neuralgia. So, also, abdominal distension may be looked for in peritonitis, but not usually in neuralgia; though Dr. Addison speaks of a very marked instance of the latter, in which the belly was as tense as a drum and exquisitely tender. The case had been regarded as one of chronic peritonitis, and the surface of the abdomen "presented a most singular appearance from the thousands of leeches" which at various times had been applied. A very important question might be raised—viz., whether a primarily neuralgic disorder may not pass into an inflammatory. Dr. Jones's belief was that it might, and though he had not observed it in abdominal cases, yet there was considerable evidence, he thought, that such a change may occur in facial neuralgia. For further remarks on this topic he referred to his work on the subject. Some might be disposed to look upon these cases as examples of hysteria, and would have summarily dealt with them by the treatment which Sir T. Watson recommends—namely, purging, followed by an assafoetida enema. To this he altogether demurred. If any definite meaning was to be attached to the term hysteria, it must imply that the patient's will was defective, that she was not sincerely anxious to get well; that, in fact, she wanted moral treatment more than medicinal. Such, he was satisfied, was not the case with the patients in question. The pain felt was, as far as he could judge, as *bonâ-fide* a pain as ever racked a sufferer from sciatica or tic douloureux; they recovered speedily, and under such treatment as was known to benefit neuralgia elsewhere.

The occurrence of some amount of nocturnal delirium, and that of a terrifying and distressing kind, in the first case, Dr. Jones added, deserved remark. Such disorder was, if he might use the term, quite *homogeneous* to neuralgia, both affections having their root in a feeble parietic state of nerve-centres, and being, as it were, branches of the same stock. The derangement, in fact, was of the same kind in both, and the diversity of phenomena depended on the site of the morbid action; the intellectual centres being affected in the one case, the sensory in the other. There were also indications that the vaso-motor nerve-centres were involved, and suffered in a like way; for the patient in the first case complained of "faint perspirations"—i.e., perspirations attended with a sense of faintness; and in the second, of copious nocturnal sweating, precisely such as is met with in maladies of exhaustion.

Another noteworthy point observed, especially in the first case, and which Dr. Jones said he had not unfrequently met with in other un-

questionable neuralgias, was the reproduction of the pain by exertion. This depended on the fact (for such he held it to be) that consumption of nerve-force in one centre, or, to speak more correctly, of material qualified to generate nerve-force under oxidation, diminishes its production in another, and so favours the recurrence of a disorder which is essentially dependent on the failure of nerve-force.

The special cause of the disorder in these cases could not be said to be clearly ascertained. It might be thought that the second was one of lead-poisoning, as the patient had been exposed to the smell of paint; but he could not take that view. There was no notable constipation, and no blue line on the gums. The pain was not like that of colic; it was attended with fever, followed by copious night-sweats, and cured by tonics. He had never seen anything like this in the frequent cases of lead disease he had met with. The lactation and leucorrhœa no doubt had materially promoted the action of the exciting cause.

The diagnosis once made, the remedies to be used were plain. Opium to relieve suffering, tonics to restore strength, the action of both being *led*, rather than seconded, by repose and good nourishment. In doubtful cases, after ascertaining that the bowels had been sufficiently cleared, he advised the use of an opiate enema before applying leeches. The result of this means might be so satisfactory as to make the further treatment clear. On the other hand, it was to be observed that in a puzzling case Dr. Addison thought it an error on the right side (for an error it proved to be) to employ the remedies for peritonitis. The few leeches which were applied in the second case gave relief; but he, nevertheless, thought they were unnecessary and undesirable. It was by no means impossible for such means, by the temporary benefit they produce, to betray the practitioner into their repetition, with ultimately disastrous consequences.

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 40.—*On the Nature and Treatment of Croup.*

By J. H. HOBART BURGE, M.D., Surgeon to Long Island College Hospital, Brooklyn, U.S.A.

(*New York Medical Journal*, July.)

For the sake of perspicuity, Dr. Burge states his conclusions in several propositions:—

PROPOSITION I.—False croup is a simple spasmodic affection, very well named laryngismus stridulus. It is rarely if ever fatal, and would hardly excite apprehension if it were always possible to distinguish it, and to feel sure that there were no inflammatory complications. It is always sudden, generally occurs in the night, is frightful to witness, and distressing to experience.

PROPOSITION II.—True croup is an inflammation of the tissues lining the larynx and trachea, and sometimes extending to the bronchial ramifications. It may be superficial, involving only the mucous membrane, or it may involve the subjacent areolar tissue.

PROPOSITION III.—Effusion of plastic lymph, coagulation, and consequent formation of false membrane, occur in about one-sixth of all the cases of true croup.

PROPOSITION IV.—The popular treatment of croup, in all its phases, has been and still is, in Dr. Burge's opinion, severe and full of danger.

PROPOSITION V.—Emetics and nauseants, as a rule, do harm.

The only exceptions that Dr. Burge would make to this rule are, that ipecacuanha may be given in a single emetic dose, when the stomach is full, particularly if indigestible food has just been taken, and sulphate of zinc or sulphate of copper, or some other non-depressing emetic, when death threatens from simple laryngeal obstruction, and when there seems reason to hope that the false membrane may be detached and thrown off by its mechanical action.

PROPOSITION VI.—If the stomach be full, or indigestible food have been recently taken, a single emetic may be given. It is, however, in Dr. Burge's experience, rarely required.

PROPOSITION VII.—Give a dose of bromide of potassium sufficient to quiet all spasmodic action—four to twenty grains, and repeat every six hours.

PROPOSITION VIII.—Give one half to one teaspoonful of liquor calcis every hour or every half hour.

PROPOSITION IX.—Allow the patient to inhale the vapour of slacking lime.

PROPOSITION X.—Take equal parts of impure carbolic acid and glycerine. Pour upon a teaspoonful of this mixture, in an open basin, a pint of boiling water. Renew this every four hours, and allow the patient to inhale its vapour for a few minutes. Let the preparation stand in the room till renewed.

Lime-water and carbolic acid, though possessing opposite chemical properties, are both useful, and both at the same time, though not at the same instant. Dr. Burge has observed, while using carbolic acid in surgical practice, that, whenever venous blood was touched by it, it instantly became arterial. Lime-water dissolves the false membrane, to use a paradox, before it is formed, while it is also gently stimulating and alterative to the inflamed surface. Carbolic acid acts directly upon the nerves and vessels of the larynx, trachea, and bronchi, aiding in the oxygenation of the blood and in the exfoliation of the diphtheritic deposit. It is also a valuable disinfectant, and will destroy any diphtheritic poison that may be lurking about unawares.

PROPOSITION XI.—Give an enema of strong hop-tea, at least twice a day. If the child be costive, add to the first enema one or two teaspoonfuls of table-salt.

The injection is given to unload the vessels, and to give the diaphragm free play.

Hop-tea is chosen on account of its sedative and antispasmodic influence. Dr. Burge avoids cathartics because of their disturbing and debilitating effects. A simple cathartic dose of calomel—ten to twenty grains—has been highly recommended; and though Dr. Burge would not ordinarily give it, he can see no great objection to its use.

PROPOSITION XII.—Use externally some gently stimulating and anodyne liniment. Dr. Burge prefers linimentum saponis, slightly

ammoniated, ℥ij; tinct. rad. aconiti, ℥ss. Apply this with a camel's-hair pencil.

Do not bind the liniment to the neck with cloths of any kind; it is not only liable to vesicate, but it adds greatly to the discomfort of the little sufferer to have the neck in any way pressed upon, or restricted in its movements. On this account the weight of poultices makes them objectionable. Tincture of iodine, either simple or compound, may be substituted for the liniment. Turpentine is a good application.

PROPOSITION XIII.—Let the diet be meat, broths, and milk, or milk-punch and wine-whey. Give water *ad libitum*.

Dr. Burge indicates by this proposition that we should sustain the patient. As an inflammatory affection it is of slight extent, and all experience goes to show that powerful antiphlogistic remedies are of no avail. On the contrary, an element of asthenia is often manifest at an early stage.

The amount of stimulation and support necessary must of course be left to the judgment of the physician in each case. Children at the breast should generally depend upon their natural aliment, but even with them stimulation is sometimes necessary.

PROPOSITION XIV.—As a rule, Dr. Burge is opposed to topical applications.

PROPOSITION XV.—Tracheotomy is unjustifiable, except as a *dernier ressort*, and even then it is generally a forlorn hope.

Dr. Burge does not doubt that lives have been saved by it, yet he strongly suspects that an equal number have been destroyed by it.

ART. 4I.—*On the Treatment of Croup.*

By Dr. DAGUILLON, of Oran.

(*Gazette Hebdomadaire*, No. 30, 1870.)

“In cases marked by suffocation, imminent asphyxia, a low pulse, and absence of vomiting after the administration of an emetic, whether there be diphtheritic patches at the back of the throat or not, it seems to me that an energetic treatment is indicated.

“I take a piece of sponge of the size of an almond, fixed upon a piece of wire, and plunge it into liquor ammoniæ until it is thoroughly softened.

“The subject having been placed in a good light, and held steady by assistants, I depress the tongue by means of the handle of a fork, and if I have any fear of the resistance of the child, place between its molar teeth the shaft of a knife; with the other hand I carry to the space between the tonsils, taking care not to touch these bodies, the small piece of sponge impregnated with ammonia which is thus volatilized. I make the child respire for a time sufficient for the effect of the vapour to become sensible in the countenance. A glass of fresh water kept close at hand then serves for washing out the parts at the back of the mouth. These inspirations are repeated three times, with short intervals.

“The subsequent treatment consists in making the child gargle its throat with a solution of chlorate of potash, and applying belladonna ointment, mixed with hydrochlorate of ammonia, to the back of the neck.

“*Immediate Effects.*—The presence of ammoniacal vapours in the larynx and bronchi immediately determines a hypersecretion of mucosities which the infant most frequently rejects by vomiting. This modification of the vitality of diseased mucous membranes is accompanied by an excretion of false membranes, and after each of the ammoniacal inspirations I recommend the mother or nurse to observe whether these are contained in the vomit.

“*Consecutive Effects.*—The expectoration, frequently absent before, becomes abundant; the expectorated matter contains *débris* of false membranes; the oppression diminishes; the cough becomes less hoarse, and the voice can be heard. The general symptoms are also relieved.”

ART. 42.—*Treatment of Croup.*

By Dr. VOGEL.

(*Treatise on the Diseases of Children.*)

Dr. Vogel speaks in general terms against both emetics and tracheotomy in this disease; indeed, he says that “the prognosis in well-declared croup may be set down as fatal.” In respect to emetics, he generally gives one or two doses to produce vomiting in the early stage, but regards the production of prolonged nausea as “useless torture.” He agrees with the opinion “that tracheotomy is of no real service in true croup,” and attributes the success of the operation in France partly to the greater prevalence in that country of diphtheria—a certain number of cases operated on as croup being really examples of the latter disease—and partly to the difficulty, at an early stage, of distinguishing true croup from catarrhal laryngitis.

ART. 43.—*On Diphtheria, and its Treatment.*

By WILLIAM MARSHALL, M.D.

(*Glasgow Medical Journal*, August.)

Of all the medicines recommended for internal administration, the only one Dr. Marshall has the slightest faith in is chlorate of potash and iodide of potassium mixture; but all his experience tends to prove that the best treatment is the local application of caustic, *after carefully removing the false membrane.*

ART. 44.—*Case of Pneumonia ; Enlarged Kidneys.*

By HENRY KENNEDY, M.D.

(Dublin Quarterly Journal of Medical Science.)

At a meeting of the Pathological Society of Dublin, Dr. Henry Kennedy detailed the following case:—

“Wilds, a man of thirty years of age, was admitted to the Cork Street Hospital, 17th January, 1870. He had drank hard, and been affected with syphilis, but his look was that of a healthy man. When first seen he was labouring under a severe attack of pneumonia of the lower lobe of the left lung, in the second stage, marked by all the usual symptoms, and also very severe pain in the side. Under ordinary treatment the disease yielded, and so rapidly, that by the third day it had nearly ceased. At this period he began to suffer from vomiting (he had not taken any tartar emetic), and threw up bile in considerable quantity, and of a very dark colour. As this went on his tongue, which at first was coated with a white fur, rapidly changed its appearance, and became red, glazed, hacked, and finally blood oozed from both it and the gums. With this state the general symptoms became much more serious. The pulse was rapid and small, the face sunk, and the extremities livid and cold. Nothing whatever was retained on the stomach. He died ten days from the time the vomiting began—his mind being wonderfully clear all through his illness. On post-mortem examination the lower lobe of the left lung was found semi-solid, and of a blue colour, the appearance of lymph on it being much less than usual. This state may possibly have been due to the rapid wasting which went on during the last ten days of the patient’s life. The kidneys, however, were the organs at fault; for they were found much enlarged, nearly double their ordinary size, and afforded marked specimens of the large white kidney constituting one of the forms of Bright’s disease.”

This case Dr. Kennedy thought one of practical importance; for, though disease of the kidneys frequently gives rise to affections of other organs—the stomach amongst the rest—it was not common for the symptoms to assume the very acute form which they did in this instance, and which ran their course in ten days. In this latter point of view the case was one of very considerable importance.

ART. 45.—*On Caseous Broncho-Pneumonia (Pulmonary Phthisis).*

By Dr. E. AUFRECHT.

(Berliner klinische Wochenschrift, Nos. 9—11, 1870 ; and Schmidt’s Jahrbücher, No. 8, 1870.)

This paper is based upon 100 cases with post-mortem results of tuberculosis (comprehended in Laennec’s sense), which had been under

the notice of Dr. Aufrecht in the Magdeburg Hospital. It commences with a succinct historical review of the development of doctrines concerning tuberculosis since the time of Bayle. In 92 out of the 100 cases observed by the author, the lungs were affected. In 48 cases, these organs were exclusively affected, and presented advanced changes: as great defects of lung substance, filling of the bronchial terminations and the alveolæ with cellular or disintegrated material, extensive proliferation of connective tissue and bronchial dilatation, &c. In no instance were genuine tubercles found. Dr. Aufrecht, for this reason, recommends for this affection, following Virchow, the name of "cheesy broncho-pneumonia κατ' ἐξοχην, with the modification that the name "cheesy-pneumonia" be reserved for cases in which the affection involves at one time the whole of one pulmonary lobe. To these 48 cases are added 2 cases in which, in addition to the lung changes, ulcers in the larynx were present, and 14 cases in which the intestines were ulcerated. In these 16 cases, Dr. Aufrecht excludes the presence of tubercle both in the larynx and in the intestines, and holds that the ulcers in the first locality were the result of ulceration commencing in the cellular elements of the mucous glands; in no instance, even in examination of the living subject, could Dr. Aufrecht find tubercle in the neighbourhood of the ulcer. The intestinal ulceration, the author, agreeing with Niemeyer, attributes to inflammation and breaking down of the solitary follicles and Peyer's patches. To the above 64 cases 4 more are added, in which, besides the lung affection in question (cheesy broncho-pneumonia), deposits of genuine tubercle on the pleura were found. Four more cases are added to the last, in which intestinal ulceration and tubercles upon the peritoneum existed, and furthermore 16 other cases, in which miliary tubercle was observed in several organs. In these cases the lungs themselves were affected in 7 instances only, whilst in the upper lobes the lesions caused by broncho-pneumonia, as infiltrations, caverns, &c., were constantly observed, whence Dr. Aufrecht concludes that caverns do not result from the influence of genuine tubercles. In the remaining 4 out of the 92 cases, the only pulmonary lesion was the existence of tubercle which had occurred there simultaneously with the deposit of tubercles in other organs; hence the disease had not proceeded from the apices of the lungs.

From these facts Dr. Aufrecht comes to the following conclusion:—

"The disease proceeding from the apices or the upper lobes of the lung, after having been restricted to these regions for a longer or shorter time, and which forms the complex symptoms known by the name of phthisis, *never* commences in the formation of tubercle, but always in the form of broncho-pneumonic deposits. In this form may the affection proceed from beginning to end, if we except those changes in other organs which do not come under the heading of cheesy inflammation; in a small proportion of cases only is cheesy pneumonia complicated by tubercle."

It is, moreover, according to Dr. Aufrecht, impossible that one could diagnose a case of phthisis commencing with the formation of tubercles which remain for a longer or shorter time restricted to the upper portions of the lungs, and Niemeyer's attempt to establish a diagnostic sign for primary tubercular phthisis is described by the author as a failure in

one case coming under his notice, in which clinically Niemeyer's characteristic indication of tubercular phthisis was presented, but which proved on section to be an instance of cheesy broncho-pneumonia which had advanced to the formation of a cavern as large as the fist in the apex of the right lung, whilst not a single tubercle could be found in any part of the body. With regard to the question of heredity, Dr. Aufrecht shares unconditionally in Niemeyer's opinion concerning the frequent occurrence of an inherited predisposition to caseous broncho-pneumonia. Out of the 88 cases of broncho-pneumonia observed and submitted to post-mortem examination by our author, there were 20 in all that had a history of hereditary transmission:—

- “Nine times in the 48 cases where the patients suffered exclusively from caseous broncho-pneumonia.
- “Five times in the 14 cases of caseous broncho-pneumonia and intestinal ulceration.
- “Three times in the 4 cases of caseous broncho-pneumonia, intestinal tuberculosis, and ulceration.
- “Once in the 4 cases of caseous broncho-pneumonia and tubercles of the pleura.
- “Twice in the 16 cases of caseous broncho-pneumonia with tubercles of several organs.”

From these observations of Dr. Aufrecht we obtain a proportion of 1 to $4\frac{2}{5}$. On the other hand, Dr. Aufrecht has not met with the slightest support for the supposition of an hereditary predisposition to tuberculosis. Children, says the author, may be born with the tubercular disposition, but this may be innate in them; one can inherit only that which the parents possess: an innate morbid disposition need not be possessed by the parents.

Thus we can explain cases of miliary tuberculosis in children, especially of tubercular arachnitis, as the results of an innate disposition, although the same affection is produced through broncho-pneumonia in the parents, through syphilis, scrofula, or some other state of debility. A further cause for the origin of tuberculosis in man is chronic inflammations. Dr. Aufrecht brings forward one case of syphilis, two cases of stenosis of the mitral valve and interstitial nephritis, and one case of interstitial hepatitis and nephritis, after which tuberculous affections—in two instances of the peritoneum, in one of the pleuræ, came on. Still, Dr. Aufrecht attributes importance to Hoffmann's opinion, that in instances where, in the post-mortem examination of subjects who have died from acute miliary tuberculosis, no cheesy deposit is present and visible, the deposit of this kind may have previously healed. This has been proved by Waldenberg in an experiment upon a dog, in which animal general miliary tuberculosis was found after the cheesy mass at the seat of inoculation had already healed. But it has also been proved experimentally that for the production of miliary tuberculosis a cheesy deposit is not necessary, and foreign bodies, as pieces of sponge and cork introduced into the peritoneal cavity, have given rise to tuberculosis in these animals. In consequence of these facts, and of the results of some investigations made by himself on miliary tubercles of the peritoneum and pleura, in which these bodies were found placed as heaps of

cells about inflamed lymph vessels, Dr. Aufrecht does not hesitate to regard miliary tuberculosis as nothing more than "a granular perilymphangitis," and to deny that the disease is in any way a specific one, and analogous to syphilis and glanders.

In the same manner that Dr. Aufrecht accepts the fact of heredity in cheesy broncho-pneumonia, so he regards a great portion of other conditions, which some time since were brought into closer relation with the tuberculosis of Laennec, as causes for cheesy broncho-pneumonia. He restricts himself to the following statement:—

"All diseases, acute or chronic in their characters, which have either involved the whole organism by sympathy, or have produced such serious changes in important organs and systems, that these can no longer perform those functions which are necessary for the proper nutrition and growth of the subject, may under certain circumstances result in caseous broncho-pneumonia. But only when we recognise that a specially disposed inflammation lies at the root of the broncho-pneumonia, which leads to pulmonary phthisis, do we come nearer to a wider understanding of the whole affection, and gain a starting-point from which we, with later additions to our knowledge, may penetrate still further and learn more concerning the nature of this disease."

Dr. Aufrecht, therefore, places caseous broncho-pneumonia, with regard both to ætiology and clinical history, in the position formerly occupied by the tuberculosis of Laennec. Acute miliary tuberculosis, however, constitutes a sharply defined affection; and there are no grounds, although it is often complicated with caseous broncho-pneumonia, for confounding the two affections together.

To the foregoing remarks Dr. Aufrecht appends his opinions concerning the relation of hæmoptysis to broncho-pneumonia. He regards hæmoptysis as a secondary symptom. The consecutive fever and the inflammatory phenomena are, like hæmoptysis itself, the results of the destroyed continuity of an inflamed and broken-down portion of lung, whereby the neighbouring vessels are left unoccluded by coagula, and extravasation thus favoured. Hæmoptysis which is not followed by broncho-pneumonia, and which passes off without any further serious result, without there being any cause for attributing the attack to distension of the pulmonary venous system, or to any disease of the blood or vessels, &c., Dr. Aufrecht is inclined to attribute to the presence of an inflammatory centre in the lung, since the curability of circumscribed broncho-pneumonia cannot be doubted.

ART. 46.—*On the Expectant Treatment in Pneumonia.*

By DR. LE BEUF.

(*Etude Critique sur L'Expectation dans la Pneumonie*, Paris, 1870; *Gazette Hebdomadaire*, No. 29, 1870.)

The author has carefully collated the documents which deal with this question. Comparing together the very extensive statistics published in Germany, England, and France, Dr. Le Beuf has established the following conclusions:—

"Pure expectation is indicated from the point of view of the age and constitution of subjects. With infants, in the great majority of cases; with adults and old people, who are not sufficiently strong to resist readily energetic antiphlogistic remedies, without being debilitated to the point of not being able to support without danger the reducing regimen of rigorous expectation; finally, when the temperature or the diathesis of the subject do not present special indications. With regard to the symptoms and the form of the malady, expectation is indicated when the affection presents itself with benign symptoms—the pain not very violent, the dyspnœa not very intense; and finally, when the malady is exempt from complication, or when its form presents no special indications.

"Absolute expectation represents an antiphlogistic treatment not very rapid in its effects and with an energy proportionate to its duration."

ART. 47.—*Treatment of Hæmoptysis.*

By DYCE DUCKWORTH, M.D.

(*The Practitioner*, August.)

Dr. Duckworth discusses the practice of treating hæmoptysis with styptic remedies, and maintains that they may be dispensed with in favour of the following more simple plan:—

"On the occurrence of continued hæmoptysis all other remedies should be withheld, and a simple astringent or slightly aperient medicine given. A good form is ℥x to ℥xv of dilute sulphuric acid, and, according to the state of the bowels, ℥ss to 3j of sulphate of magnesia may be given with this in some spearmint water, every half hour at first, and then less frequently. In addition to suitable posture (semi-erect), and other well-known favouring conditions, absolute silence should be enjoined, and the patient urged to refrain from coughing as much as possible. Should the bleeding continue, we should place a bladder of ice,* or a frozen compress,† between the scapulæ for a short time. This sometimes acts promptly, no doubt by reflex action, and probably this is the only means whereby a rapid change can be induced in the vascular walls. Should this fail, tinct. digitalis should be given (℥x or xv) with each dose of the astringent saline. In addition to this, if the case appears obstinate, a blister should be painted on the front of the chest, under the clavicle of the side believed to be affected.

"The ordinary habits and remedies may be resumed in a day or two after the cessation of the hæmorrhage.

"The above description comprises the most beneficial method which I have witnessed, and, in setting it forth here, I need not say that there is no novelty in it. I do believe, however, that it deserves to be employed more frequently, instead of the medication with opium and powerful astringents."

* Walshe, *Diseases of the Lungs*, 3rd edit., p. 427.

† Niemeyer, *Textbook of Practical Medicine*, Amer. trans., vol. i. p. 152.

ART. 48.—*On Local Inflammations in Certain defined Conditions as Causes of Pulmonary Phthisis.**

By ANDREW CLARK, M.D., F.R.C.P.

(*Medical Press and Circular*, October 26.)

The author said that hitherto his illustrations had been drawn from cases of pneumonia and pleurisy, and as yet he had found no exception to the laws he had set forth as regulating these relations to phthisis. In the present paper he proposed to take his examples from chronic bronchitis, which, though a less common, was an equally efficient agent in bringing about phthisical destruction of the lung.

CASE 1.—A woman, forty-eight years of age, was admitted into the London Hospital for chronic bronchitis in June, 1866. She has had winter cough for twelve years back. Percussion sounds good over both lungs; with the stethoscope sibilant and sonorous râles are heard everywhere, and at bases there is coarse moist expectoration. Pulse 80; no fever or night sweats. She was treated with alkalies, and afterwards with acids, iron, and creasote inhalations, and was doing well until she was placed on a more liberal diet, with beer and wine. It being obvious that the change did harm, the diet was reduced. This displeased her, and she left the hospital. In three months she was again admitted, under another physician. She got worse, became feverish, and in February, 1867, dulness on percussion in the supra-spinous fossæ was noted. In March lung tissue was found in the expectoration, she got diarrhœa, and died in the following May. The post-mortem examination revealed extensive disease in the left lung, the bronchi were thickened and dilated, and the intervening lung-tissue was converted into a dense fibrous mass; a few small cavities were seen, and also some grey tubercles in both apices.

CASE 2.—J. L., aged sixty-five, a widow, had winter cough for ten years. On admission, had much cough and muco-purulent expectoration. No dulness on percussion; sibilant râles over both lungs; pulse, 64; temperature 98°. This patient gradually declined, owing to a nervous shock: she got hæmoptysis and diarrhœa, and signs of consolidation about right lung. She died, but no post-mortem was obtained.

CASE 3.—J. W., aged fifty-three, a dock labourer, had bronchitis over twenty years. Four years ago his strength failed, he got profuse purulent expectoration, he became feverish, bronchial breathings and crepitations were heard over his chest, and right lung became consolidated about two years later. The sputa became lumpy, and contained areolæ of elastic tissue. In December, 1869, the urine was found to be albuminous, and in the following April he died. The post-mortem showed dilated tubes, grey tubercles, and small cavities in the lungs.

CASE 4.—Mrs. B., aged sixty-one, lives in Kent, for many years subject to bronchitis. In 1864 general health failed; she became feverish, and bands of elastic tissue were found in the sputa; crepitation heard in middle-third of right lung. The progress of the disease here is slow. Pulse 80; temperature 98°. The patient is still under observation.

In concluding, Dr. Clark said that the chief causes of phthisical complication, in cases of chronic bronchitis, appear to be repeated

* Abstract of a Paper read at a Meeting of the Medical Society of London, October 17.

colds, over-feeding, and the abuse of stimulants. Loss of strength, feverishness afterwards subsiding, and coarse moist crepitations were signs of the phthisical condition. When the bronchi ulcerate fibres of lung tissue are found in the sputa, fibroid or tubercular pneumonic changes in the lung follow, but the progress of the disease is usually slow. By meeting feverish complications with rest, milk diet, and salines, and by the use of inhalations of iodine, creasote, or carbolic acid, and appropriate treatment of tonics and diet, the progress of the disease may be greatly retarded, and life indefinitely prolonged.

ART. 49.—*Treatment of Pulmonary Consumption.*

By JAMES TURNBULL, M.D., Physician to the Liverpool Royal Infirmary.

(*Liverpool Medical and Surgical Reports*, October.)

When the disease manifests itself by local physical signs, as well as by cough and general symptoms, we have two indications to carry out, one of which is to improve the general health, and to remove as far as possible the morbid constitutional state which has produced and is still adding to the local affection of the lungs; and the other, which is the minor, but still an important indication, is to relieve cough, pain, and other local symptoms, and to remove complications. The first embraces not only the removal as far as possible of any known cause of the disease still in operation, and the adoption of hygienic rules in regard to diet, exercise, ventilation, clothing, mental occupation, and such change of air or climate as may be suitable for the individual case; but also, such medicinal treatment as is calculated to remove any disorder of the digestive organs and invigorate the nutritive functions. Cod-liver oil has now for many years held the first place as a medicinal or nutritive agent, capable of effecting this latter indication, and it has unquestionably a greater power of controlling tubercular diseases than any other known remedy. Judgment and skill must be shown by the physician in seeking out and removing opposing complications, which interfere with its successful employment. It is too often hastily abandoned because it does not at once agree, or seem to agree, with the patient; and its beneficial effects are often lost, because it is not perseveringly used. Its action in improving nutrition is greatly increased by the judicious use of other tonic remedies along with it. The biliary and intestinal secretions should be carefully attended to, before it is given and during its continuance. Before it is given, it is also often needful to remove irritability of the gastric mucous membrane by means of saline effervescent medicines; or by using the liquor bismuthi. In the majority of cases, it will be found that it agrees best when taken floating on the surface of an acid tonic mixture, rendered slightly bitter by gentian or some other vegetable bitter.

The acids with which the author has generally given cod-liver oil are the nitro-muriatic, the phosphoric, the lactic, and the perchloric. Dr. Turnbull has also sometimes given the sulphuric, which is more astrin-

gent, and has a greater power of checking perspirations. It is believed that hydrochloric acid assists the solution of albuminous food in the stomach, and with this view the author has given it, along with or soon after a meal. It is thought that lactic acid has a similar power, and perchloric may, in addition, have some power of communicating oxygen. The preparations of iron in combination with acids hold the place next to nitro-muriatic acid with a bitter tonic. The tincture of the perchloride, or the syrup of the phosphate with phosphoric acid, are good preparations, which may be used alternately with a nitro-muriatic acid mixture, each being given with the oil for periods of two or three weeks; and they are more particularly indicated in those cases where anæmia is a prominent symptom. The second indication, bearing on the treatment of local symptoms arising from the deposit in the lungs, embraces the means to be employed for the relief of cough, spitting of blood, and the pains which so often arise from pleuritic and other inflammatory complications. The various forms of mild counter irritation relieve most of these complications and local symptoms, but the preparations of opium and morphia, in conjunction with an expectorant, such as squill, have hitherto been found more generally useful than any other remedies in relieving cough, and in soothing general nervous irritability and promoting sleep. In cases where they have failed to relieve cough, Dr. Turnbull has occasionally seen much benefit from inhalations of small quantities of chloroform, from twenty to thirty minims, on a handkerchief. Such remedies often aid us, indirectly, in bringing about the arrest or suspension of the disease, though they cannot be said to have any of the curative influence over the disease which we would claim for climatic influences and cod-liver oil. Recently there has been brought to light a new remedial agent, hydrate of chloral, which has often a better effect than either morphia or opium in relieving cough and nervous irritability, and especially in producing sleep. It constitutes a most valuable addition to the remedial agents we possess for the treatment of many diseases, and the author has found it of great service in some cases of consumption.

In most of those cases where sleeplessness is a prominent, or distressing symptom, and generally when want of sleep tends to aggravate any other disease, hydrate of chloral is a safe remedy and more certain in inducing sleep than opium or morphia. It has this advantage also over these remedies, that it does not produce headache, constipation, or other injurious effects afterwards. In this freedom from injurious consequences it resembles bromide of potassium, but it is more speedy, certain, and powerful than this very useful remedy.

In many cardiac and pulmonary affections, accompanied with spasmodic difficulty of breathing, Dr. Turnbull has found chloral very useful; and though it is less efficacious than the preparations of opium in relieving pain, the author has often found that in small doses, of about ten grains at intervals, it relieved cough and pulmonary irritation. In cases of consumption, Dr. Turnbull sometimes gives it for this purpose; but he has found it most serviceable in those cases where there was general nervous irritability, producing restlessness and want of sleep, which aggravates all the symptoms, and, in the advanced stages, wears out the strength of the patient. In some of these cases it pro-

duces sound pleasant sleep, without any subsequent disagreeable effect, but, on the contrary, revives the patient's strength; and in comparative trials with morphia and opium, the author has in some instances found the patient give chloral a decided preference. It has seemed, too, in some cases, though not always, to have some power in checking perspiration, hæmoptysis, and bronchial secretion; and this might be so if it produces, as has been asserted, a contractile action on the capillary vessels.

(C) CONCERNING THE CIRCULATORY SYSTEM.

ART. 50.—*Specimens of Malformation of the Heart.*

By THOMAS PEACOCK, M.D., F.R.C.P., Senior Physician to St. Thomas's Hospital.

(*Medical Times and Gazette*, October 29.)

At a meeting of the Pathological Society, on October 18th, Dr. Peacock exhibited two specimens of malformation of the heart. The first was a case of entire obliteration of the orifice and trunk of the pulmonary artery. This specimen was removed from a cyanotic child, aged two years and three months, who was an out-patient of Mr. Croft at St. Thomas's Hospital, and died of cancrum oris. In this case there was a large aperture in the septum of the ventricles, but the separation between the auricles was entire, and the foramen ovale was closed. The ductus arteriosus was largely open and communicated with the pulmonary branches, and the blood had so been conveyed to the lungs. The second case was one of very great contraction of the orifice of the pulmonary artery, with malformation of the valves. The septum of the ventricles was incomplete, but the foramen ovale was closed, and no trace of the ductus arteriosus could be found. In its place, however, there were two large branches given off from the under side of the aorta, near the origin of the left subclavian artery. That on the left side entered the left branch of the pulmonary artery; while that on the right side, though it had probably some communication with the right pulmonary artery, divided into several branches, apparently distributed to the right lung. The orifices of both these vessels were impervious. Dr. Peacock said that cases of this kind of malformation, in which the small size of the pulmonary artery was in part compensated by supplementary branches from the aorta, were not frequently seen. Probably in most such cases, as in this, the ductus arteriosus did not exist, owing to the premature obliteration of the portion of the branchial arch which should form it. The preparation was removed from a boy seventeen years of age, who was under Dr. Peacock's care in St. Thomas's Hospital. He had suffered from difficulty of breathing and palpitation of the heart all his life, and was somewhat cyanotic. The existence of contraction of the pulmonary orifice and of an aperture in the septum of the ventricles was surmised during life.

ART. 51.—*On the Classifications of Cardiac Perforations.*

By Prof. ALVARENGA.

Translated from the Portuguese by Dr. LUCIEN PAPILLAUD.

(Gazette Médicale de Paris, No. 36, 1870.)

“The facts relating to perforations which bring into communication the right with the left cavities of the heart may, in my opinion, be reduced to three groups.

“In the first group I place instances in which there is persistence of the normal openings existing in the fœtus independently of other organic changes, cases in which the perforations represent the orifices of communication which naturally existed at some period of fœtal life; these are primordial changes always congenital, and veritable defects of conformation with regard to the period of life at which they are observed. We designate cases of this kind as *original or congenital perforations by anomaly*.

“In the second group are ranked cases of perforation due to morbid changes of the heart, the large vessels, or the lungs. These are secondary abnormal or pathological conditions, either congenital or posterior to birth. I call these *consecutive perforations*.

“The third group includes cases in which the perforations are the consequences of diseases *in situ*, of a morbid change of the tissue of the organ, produced either before or after birth. These are veritably accidental pathological conditions acquired during the course either of the *intra* or the *extra* uterine life. I give to lesions of this class the name of *accidental perforations in consequence of a disease in situ*.

“These are, in my opinion, the principal origins of communication between the auricles or the ventricles. To make the matter clearer, the perforations may be divided into two fundamental forms: 1st, primary perforations by anomaly; 2ndly, consecutive perforations. This second form presents two varieties: 1st, *perforations consecutive to anomalies or to more or less remote lesions*, and which formed the second group of our first division; 2ndly, *perforations consecutive to an affection or morbid change in situ*, the third group of the former division.

“The perforations have been classed as congenital and accidental. This division seems to me to be faulty, or, at least, scarcely applicable, because instead of giving a clear explanation it may lead one into error. In fact, the natural openings in the inter-auricular and the inter-ventricular septa may be simply anomalies, a continuation of the normal arrangements of the fœtal condition; or, indeed, pathological alterations, in which case the term accidental would be equally applicable although they had been produced during intra-uterine life; and reciprocally the openings observed at a more or less advanced period of extra-uterine life might be equally attributed to both sources, either to an anomaly or to a pathological lesion.

“Consequently, one cannot arrive at the determination of the cause of cardiac perforations from the sole fact of the epoch at which they may be observed.”

ART. 52.—*On Cyanosis.*

By Prof. ROKITANSKY.

(Pathological Anatomy, vol. ii. part i. p. 510.)

Professor Rokitansky in the above work gives an article on cyanosis, in which he treats at large of the various kinds of that affection, whether as depending on faulty development of the heart, or on causes extrinsic to that organ.

He says:—"A distinction is generally drawn between an organic disease of the heart acquired in the later periods of life occasioned by disease of the lungs, and that form of cyanosis dependent upon congenital malformation of the organ. The latter is called cardiac cyanosis. It will appear that the essential cause and character of both are the same. Cyanosis occurring in cases of congenital malformation of the heart has been mostly attributed to the mixture of the two kinds of blood, or rather to the passage of the venous blood into the arteries either by way of the ventricles or the auricles, or the vessels themselves; but it has been common to refer this commingling of the currents and the accompanying symptom of cyanosis to deficiency as to the septa of the heart. We are of the opinion that cyanosis *always* depends not upon the mixture of the two kinds of blood, which is in many cases problematical, and in some takes place in a directly opposite direction to what is supposed, but on the impeded reflux of the venous blood into the heart, and a consequent habitual, or, in some instances, intermittent engorgement of the venous and capillary systems; and that herein all the varieties of cyanosis, however differing as to their original and acquired abnormal conditions of the heart and lungs, coincide, and may without violence be classed together."

ART. 53.—*Autopsy of a Case of Cyanosis.*

By W. H. SHEEHY, L.R.C.P. Ed., M.R.C.P., &c.

(The Lancet, November 12.)

Dr. Sheehy relates the case of a girl, aged sixteen, who was seized, on going upstairs after she had partaken of supper, with a fit of giddiness—with sickness and vomiting. She was assisted into her room, and on being placed on the bed, fainted, as her mother thought. Dr. Sheehy, who was at once sent for, found her dead, with dark purplish-blue colour of body and face generally. From the parents' statement he gleaned that she had been examined by two medical men at separate intervals, both pronouncing her case to be heart malformation, due to the existence of "a passage between the auricles." Owing to some opposition on the part of the parents, the post-mortem was delayed, and decomposition had set in considerably.

"*Autopsy seventy-two hours after death.*—Rigor mortis almost complete. Body apparently well nourished. No marks of violence. Intense purplish-blue colour of face and body. Venous blood oozing from mouth and nose. General emphysema of subcutaneous areolar tissue;

felt like lung-tissue. Scalp deeply congested. On removing the calvaria there was an escape of a large quantity of black, venous blood—nearly a pint I should think. Dura mater contained extravasated blood; brain-substance less firm than in health; sinuses contained black blood. The pleuræ were adherent throughout. Lungs congested and emphysematous. Areolar tissue of mediastinum emphysematous. Pericardium contained about a teacupful of dark-coloured fluid. Heart congested, large, and flabby, and was empty, with the exception of a small clot in right ventricle, weighing twenty ounces. Foramen ovale closed, having two transversely oval foramina, about the size of a large blanket-pin's head, about its centre; on making the membrane tense transversely, their edges were brought into apposition. Ventricles considerably hypertrophied, with some degeneration of the substance of the walls. The septum was occupied superiorly by an abnormal aperture the size of a florin, allowing communication between the ventricles. This foramen was partially closed during systole by a membranous prolongation of the lining membrane in the form of a lunated valve, the concavity being directed towards the apex, and connected to the walls of the ventricle at its free edge superiorly by fasciculi resembling chordæ tendineæ. Valves healthy, but somewhat thickened; pouch of Valsalva enlarged. Abdominal viscera generally congested."

There can be no doubt, Dr. Sheehy adds, that death was caused by the exertion of walking upstairs (having always been carried previously), paralysing the heart with præcordial oppression, &c., which, from the distended state of the stomach with food, produced vomiting, by irritation of pneumogastric nerve; the effort rupturing the already over-distended superior longitudinal sinus, causing extensive extravasation of blood between surfaces of the dura mater, and pressure of brain (venous apoplexy).

ART. 54.—*Cyanosis Neonatorum.*

By CHARLES D. MEIGS, M.D., lately Professor of Midwifery and the Diseases of Women and Children in Jefferson Medical College, Philadelphia.

(*System of Obstetrics*, 5th edit., Philadelphia.)

Professor Meigs, in his *System of Obstetrics*, gives an article on, and relates several cases of cyanosis neonatorum. He says:—"In the month of November, 1832, during the prevalence of Asiatic cholera, I had charge of the case of a Mrs. Taylor. She was seized with symptoms of the epidemic, being at the time about seven and a half months advanced in her gestation. The attack was violent, and led to the premature expulsion of the child, which was born living, though very feeble. It soon began to turn blue, in consequence of its being affected with cyanosis, commonly at that time called blue disease, and as its hue grew darker and darker, its lessening respiration and the coming on of convulsions caused me to think it could not long survive; indeed, it came apparently to the point of death. The young mother, who was still ill with her cholera, could not be insensible to the danger of the

child, and I perceived that the complication of a moral shock with her other irritations might render the cure of her own malady more difficult, if not impossible. It became then, in view of the mother's position, a matter of great moment, to rescue the child from apparently imminent death. These reflections, which I made at the time, gave me great pain; for while I deemed the state of the child one of partial asphyxia from the mixture of its venous with its arterial blood, the mixture being made by injection through the foramen ovale of the auricular septum, I could devise no treatment upon which to rely for obviating that injection. I was deeply concerned, and knew not what to do. Suddenly I reflected upon the structure of the foetal heart, and the root of the foetal circulation, and I said, if I bring the septum auricularum into a horizontal position, will not the blood in the left auricle press the valve of Botalli down upon the foramen ovale, and thus save the child by compelling all the blood of the right auricle to pass by the itæ ad ventriculum, and so to the lungs to be aerated? Having practised midwifery for many years, I had on many occasions witnessed the fatal termination of cyanosis neonatorum, both in the premature and mature child. I had seen children at five, and at five and a half, at six, and at seven months vainly attempting to carry on respiratory life, and observed them to perish with the signs of cyanosis, whether from too large a foramen ovale, or from imperfect development of the respiratory machinery of the lungs, or atelectasis. In the case now under consideration, I placed the child, which seemed nearly dead, upon a pillow on its right side, the head and trunk being inclined upwards about 20° or 30° . Upon placing it down in this manner it became quiet, began to breathe more naturally, to acquire a better hue of face, hands and feet, until in a very short time it was quite well again, and did well, having no further returns of the attack of cyanosis neonati. I shall not conceal the satisfaction I derived from the successful result of my reflections thus put into practice in the case; for I thought, and still think, that the child would have inevitably died had I not thus closed the valve. In very many instances during a long obstetric experience, I had never made such a reflection upon the means of saving the blue child, of which I had seen many cut off. I believed, and still believe, that I was the first to invent the treatment, and the first case in which I put it in practice was thus eminently successful.

ART. 55.—*Experiments on the Phenomena of which the White - Blood Corpuscles and the Walls of Capillary Vessels are the Seat during Inflammation.**

By M. CHAS. ROBIN.

(*Gazette Médicale de Paris*, No. 28, 1870.)

M. Robin endeavours in this contribution to establish the following points:—The passage of leucocytes through the walls of vessels cannot

* Communicated to the Académie des Sciences.

be made out; the epithelial lacunæ or stomata admitted by Cohn-peard cannot be recognised notwithstanding the number of preparations made with nitrate of silver; an useful solution for researches of this kind is one containing 1 gramme of the nitrate to 1000 grammes of water.

The attempts to colour the globules with cinnabar powder and aniline blue were also negative. In either case the author observed only a circulation of dust particles, and sometimes embolic phenomena, in consequence of the agglutination of the foreign molecules. Grains were observed to be arrested over the white blood corpuscles, but no penetration was noticed. It is unnecessary to add that the particles of dust were never seen to penetrate or to traverse the vascular walls.

From these investigations of the circulation in the peritoneum the conclusion has been arrived at that with the above-mentioned solution of nitrate of silver one may colour, for some hours at least, the contours of the pavement epithelial cells, but that one cannot discover on the peritoneum of the diaphragm lacunæ similar to those that have been described by Recklinghausen.

In peritoneum inflamed artificially by the introduction of foreign bodies introduced into the abdominal cavity, one is able to make out, at least at the commencement, that the leucocytes do not arise to the epithelium, for this can be observed intact above elements of new formation which surround the vessels and infiltrate the peritoneal tissue. The epithelial tissue does not undergo any change for the first six hours after the commencement of the inflammation.

With regard to the proliferation of leucocytes in the blood, the author, who in 1865 was inclined to admit of its existence, was not able in the present investigation to establish the fact, in spite of the numerous researches made by him.

In the cornea of rabbits M. Robin has been able to make out the presence of fusiform and stellated corpuscles disposed regularly between the bands of bundles of laminated tissue forming the basis of the organ. On this point he admits the description of Hus.

In inflamed corneæ, in the course of a few hours, he has observed these corpuscles swell and increase to double or treble their size, the same amount of dilatation also taking place in the prolongations. The contents are transparent or finely granular, one or more nuclei are occasionally seen.

After a longer time—from two to eight hours—the contents of the dilated corpuscles divide and take forms analogous to those presented by leucocytes, which ultimately become free. It may happen, however, that this process is not very active, and that the hypertrophied corpuscles undergo a veritable colloid degeneration. The author has never seen proliferating divisions or scissions of nuclei.

According to M. Robin the generation of fresh elements takes place at the expense of the protoplasm or contained matter of the corpuscles, whose nutrition has been altered by the disturbances of circulation, which become the cause of the nutritive changes known as the *inflammatory process*. This is not far from admitting that the contents of the hypertrophied corpuscles becoming free from some cause or other, may still acquire some determined forms.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 56.—*Treatment of Aphthæ.*

By EUSTACE SMITH, M.D.

(Wasting Diseases of Children.)

Dr. Smith recommends, if *aphthæ* form, that attention be paid to cleanliness. A powder of rhubarb and jalap, with a grain of hydrargyrum cum cretâ, should be given to evacuate the bowels; after which the following mixture should be prescribed:—℞ Potas. chloratis, ℥ij; Syrupi simpl., ℥ss; Aquæ ad ℥iij. M. ℥ij quartâ quâque horâ. This must not be diluted. When attacks of acute indigestion come on in infants, with hot skin, furred tongue, thirst, vomiting, and diarrhœa, accompanied by griping pain, all food must be stopped, and nothing allowed but cold barley-water. The stomach should be relieved by an emetic of ipecacuanha, after the action of which a purgative of rhubarb and magnesia should be given to clear out irritating matters from the bowels. A mixture of chalk and catechu, with aromatic confection, can then be given, or the following:—Bismuthi nitratis, ℥j; Pulv. cretæ aromat. ℥j; Syrupi, ℥ss; Mucilag. tragacanth., ℥ss; Aquæ ad ℥iij. M. ℥ij ter die. If the diarrhœa continues after the tongue has become clean, half a drop of laudanum can be added to each dose of either of these mixtures, or small doses of sulphuric acid may be given with opium. ℞ Acidi sulphurici aromat., ℥ss; Tinet. opii, ℥vj; Syrupi, ℥ss; Aquæ carui, ad ℥iij, ter die.

When the irritability of the stomach has subsided, milk and lime-water may be given, but with caution, lest the vomiting return.

ART. 57.—*The Coating of the Tongue.*

By J. M. DA COSTA.

(Medical Diagnosis, 3rd edit., pp. 844, Philadelphia.)

Dr. Da Costa gives, in his *Medical Diagnosis*, the subjoined variations of the coating of the tongue:—

“In health the tongue has hardly a discernible lining; disease quickly gives it one. In inflammation of the respiratory textures, at the commencement of fevers, in disorders of large portions of the abdominal mucous tract, the epithelium accumulates, and the tongue has a loaded whitish appearance. The coat is apt to be yellowish in disturbances of the liver, and of a brown or very dark hue when the blood is contaminated. But we must be very sure, in drawing our inferences, that the abnormal aspect be not due to the food partaken of, or to medicine. Its colour is also modified by the character of the occupation. Thus, as Chambers asserts, there is a curious, smooth, orange-tinted coating on the tongue of tea-tasters. A local cause sometimes gives rise to a thick, opaque coat. For instance, decayed teeth may produce a yellow

sheathing on one side. Affections of the fauces also occasion a deep yellow hue.

"Again, some persons, even in health, wake up every morning with their tongues covered at the back with a heavy coating, which wears off during the day."

ART. 58.—*Ulcer-Membranous Angina.*

By J. M. DA COSTA, M.D.

(*American Journal of the Medical Sciences*, July.)

At a meeting of the College of Physicians of Philadelphia in March last, Dr. J. M. Da Costa described a form of sore throat then prevalent in that city. The complaint begins with a chill, followed by fever and the ordinary manifestations of angina. Within twenty-four hours of the outbreak, on the tonsils are seen small spots covered with a yellowish exudation, which, on close inspection, is found to be limited to the follicles, one tonsil being more affected than the other, but both sharing the disorder. The tonsils and the palatine arches are red and swollen, as also may be the back wall of the pharynx. Painful enlargement of the sub-maxillary and cervical glands follows, and there is great prostration. The fever is not high, but there is loss of appetite, nausea, vomiting, coated tongue, and sometimes diarrhœa. After three or four days the yellow spots disappear, and leave raw spots, as if from superficial ulceration. The glands subside, and the patient, though convalescent, is left very weak, and is specially liable to relapses.

Dr. Da Costa draws a line of distinction between this epidemic affection and diphtheria, but it has the result of a special and milder poison. He thinks the cases he describes were perhaps identical with some of follicular diphtheritis lately reported, but more certainly with the malady named by Gubler "herpes guttural," but which Trousseau has delineated better under the term "common membranous sore throat."

ART. 59.—*On Mucus Disease.**

By WALTER WHITEHEAD.

(*The Lancet*, August 20.)

"This disease, though noticed by some of the ancients, and described by a few of the more modern physicians, has received but occasional recognition even in the best of our standard works on medicine. Out of some hundred and twenty writers who refer to the disease, barely half-a-dozen describe it under the same name. Celsus, Fernel, Van Swieten, Berenger, Plater, Seunert, Gabucinus, Morgagni, Bonnet, Brunner, Marcard, Stoll, Theden, and more recently Kämpf, Powell,

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association at Newcastle-on-Tyne, August.

Good, Gendrin, Simpson, Graves, Cruveilhier, Todd, Clark, and Perroud, may be mentioned as the principal authorities on the subject. The disease is characterised by the secretion of mucus of an abnormal composition on mucous surfaces, in which condition the mucus is prone to consolidate into masses, shreds, or tubular casts. These secretions form and exfoliate periodically, each exfoliation being critical, and immediately followed by an amelioration of the symptoms which aggravate it up to this point. This critical period is accompanied by pains of a spasmodic character and of variable intensity. The subjective symptoms are those of a most distressing nervous nature. The disease, read in accordance with modern research, may be formulated as follows:—1. The proximate cause of the symptoms referrible to this disease is the hypersecretion and accumulation of mucus on the free surface of mucous membranes; such accumulations sheathe and prevent the healthy performance of the functions natural to the part, and thus induce immediate and remote results, the effects of such suppressed functions. 2. That this hypersecretion indicates a want of balance between nerve-force and germinal matter. 3. That the nerve-force is perverted by irritation. 4. That the exciting causes are numerous. 5. That it is a character of mucous secretions under the influence of irritation for its cell elements to increase and its viscosity to diminish. 6. And that, in the disease in question, the prolific cell-formations become entangled in the albuminous fluid in which they are found, and present the membranous structures before referred to. The principal points in the treatment are as follows:—1. Discover and counteract any cause either in direct contact or in the immediate vicinity of the secreting surface, which can be traced as a source of irritation. 2. Reinvigorate the strength, and allay the nervous irritability. 3. Remove the accumulated mucus. 4. Prevent, by topical application, its re-formation. Such is a sketch of a disease, most serious in its import to the patient, and of far from unfrequent occurrence. True, the treatment is still in its tentative stage, but we are clearing the way for sounder views on the subject, by accurately laying down the causes and symptoms of a malady which one cannot doubt is constantly mistaken for one of the hydra forms of dyspepsia, and by the erroneous treatment resulting from this mistake, the first or curative stage of the disease is allowed to pass into the later and more lethal forms.

ART. 60.—*On the Nature and Treatment of Quinsy.*

By Dr. MOURA.

(*Angines Aigues ou Graves; Origine, Nature, Traitement.* Paris: 1870.)

1. Acute and serious anginæ (quinsies), otherwise called malignant, as sore throat, simple or double amygdalitis, phlegmonous, pultaceous, or gangrenous angina, have their origin in the products of the secretion of the glands, either of the tonsils, the base of the tongue, or the fauces.

2. Acute or serious anginæ are inflammations determined by the too

prolonged sojourn, and by the alteration of these products, in the glandular cavities or follicles.

3. The best means of curing and preventing the acute anginae are those which cause the expulsion of these products; kneading or compression of the glands and follicles, emetics, repeated antiseptic irrigations, and, above all, excision of the tonsils.

ART. 61.—*On the Use of Raw Meat in Diarrhœa and Dyspepsia.*

By ROBERT DRUITT, M.R.C.P., &c.

(*Medical Times and Gazette*, July 2.)

Dr. Druitt states that he learned the use of raw meat as a remedy for diarrhœa, from the late estimable Professor Trousseau, during a visit paid to his clinique at the Hôpital des Enfants Malades in 1851. Since that time, Dr. Druitt has had abundant opportunities of proving its efficacy. The meat used may be either mutton or beef—say a tit-bit of the loin of mutton, or of the fillet or other tender part of beef. This must be submitted to a process either of pounding, or of seraping, so as to get out the red soft muscular substance, as free as possible from all fat and fibre. The muscular substance so prepared forms a soft pink pulp, and even a good-sized piece of raw meat seems to yield wonderfully little by comparison with the parts that are rejected. It must be a pulp, giving no feeling of resistance when squeezed between the fingers.

The modes of administration are many. It may be given by itself, and this way is best in the case of young children. Very young infants may suck it from the end of their nurse's finger, and most of them take it greedily enough in this way. Children who are older, say from two to five, may swallow it if dusted over with white sugar. Older persons may take it conveniently if diffused through a little strong beef-tea. But there is another way, for which Dr. Druitt says he is indebted to a lady who has made very large use of this remedy in the case of her invalid daughters, and which is known amongst a pretty wide circle as a *jellied chop*. This consists in diffusing the meat pulp through a stiff meat jelly, and allowing it to cool in a shape. This is eaten like a spice, and is very nice to any one whose prejudices are not aroused by the notion of rawness. Salt and other condiments may be added at discretion.

The cases in which raw meat has peculiar efficacy, are those in which other food passes undigested, and adds to the irritation of bowels in a state of diarrhœa. It seems to furnish the most efficient kind of nutriment with least inconvenience from bulk or other quality, and to be digested and absorbed with as little fæcial residuum as possible. Still there must be something more about it than this; for the liquid essence of beef will not take its place, neither will cooked meat.

First amongst the cases in which it is useful may be mentioned any acute cases of infantile diarrhœa, especially the infantile "cholera" of summer. No matter what medicines and what other kind of food may

be used, Dr. Druitt believes raw meat to be in itself both a remedy for the diarrhœa and a nutriment that may keep the child alive till the disease passes off.

Secondly, in the chronic diarrhœas of children, arising from scanty food, or, what comes to the same thing, food which cannot be digested, and which consequently passes the bowels as a foreign offending substance, here the raw meat acts as food and medicine.

In the habitual diarrhœa associated with "marasmus"—that is, with the superficial ulceration of the intestinal mucous membrane, and enlarged mesenteric glands of strumous children—the raw meat, especially in the form of the "jellied chop," is of most especial service. It is curious to see in cases of this sort how absolutely the stomach sometimes refuses to act upon the food put into it, so that meat, milk, &c., may be recognised unaltered in the fæces. It is just in these cases that the raw meat shows itself susceptible of quick digestion in the stomach. The cases which the ancients called *lienteria*, or *intestinorum lævitas*, and which were designated in England in the last century "lubricity of the intestines," in which stomach and bowels are so irritable that they pass on and eject the food before it has had time to be dissolved and absorbed—are equally benefited by the use of raw meat.

Lastly, there are the cases of the obstinate vomiting of pregnancy, whether attended with diarrhœa or not. This is a kind of case in which no remedy is unwelcome or superfluous. Dr. Druitt does not take to himself the credit of suggesting it, for the mother of a young pregnant lady who was in imminent danger of exhaustion from vomiting had witnessed the good effects of this food in the case of another daughter who died of ulceration of the intestines, and gave it of her own accord. But Dr. Druitt can bear testimony to the fact that the raw meat was taken readily and kept down when almost every other food was loathed and vomited, and he considers the patient's safety largely due to it.

There are other cases of atrophy, dyspepsia, and malnutrition in which it has been found useful.

ART. 62.—*Treatment of Acute Indigestion.*

By THOMAS KING CHAMBERS, M.D., Honorary Physician to
H.R.H. the Prince of Wales.

(*The Indigestions*, pp. 293. London: 1870.)

Dr. Chambers advocates in his work the following treatment of acute indigestion, based on pathological condition:—

The first condition is to spare the weakened organ as much as possible. Complete rest should be secured to it, by administering only liquid food, whose absorption requires no action of the gastric glands. Weak beef tea is the best diet, and rest of limbs best secures rest of the abdomen.

Let alcohol be avoided as a poison: it arrests still further the arrested vitality of the stomach.

Poultices and fomentations to the epigastrium relieve pain, and keep the patient on his couch. Mustard poultices and other counter-

irritants do harm if there is inflammation, and less good than fomentation if there is not.

Emetics are wanted only when completely insoluble vegetable fibre is the cause of the disease. The mildest are the best, warm mustard and water.

The natural termination of indigestion in diarrhœa is an argument for the use of purgatives; but they should be mild, otherwise they hurry the augmented secretion through the intestines with a deal of griping, and yet leave the undigested matters behind. The most eligible form is that of enema with a little mustard in it.

In children, purgatives are apt to bring on a continuance of diarrhœa, if given for stomach-ache, and they also gripe a good deal. If necessary, let gruel enemata be given. In the acute indigestions of infants, minute attention should be paid to the quality of the milk. If the suckling mother or wet-nurse should be menstruating, have recently resumed matrimonial intercourse, or had any mental excitement, the milk too readily sours. The child should have it from a bottle, with a teaspoonful of liquor calcis to the tea-cup. The same addition may be made to cow's milk, if the child is fed on that. If there is diarrhœa, a teaspoonful of water arrowroot alternately with the liquor calcis.

ART. 63.—*On the Symptoms of Salivary or Amylaceous Dyspepsia.*

By Dr. COUTARET.

(*Gazette Hebdomadaire*, No. 25, 1870.)

“Salivary or amylaceous dyspepsia proceeds from the faulty digestion of starchy elements. Whatever be the cause which may have given rise to it, it is always produced when there is any alteration, diminution, or absence of saliva.

“The persons most commonly affected are smokers, ecclesiastics, lawyers, and the laic and religious instructors of both sexes; those who expend much saliva in the exercise of their profession; those who masticate badly because they have few or no teeth; and such persons, as for instance, doctors, and busy people, who eat too quickly. Certain unhealthy callings, the abuse of medicines and of alcoholic drinks, irregular meals, violent passions, convalescence from serious maladies, &c., also determine this form of dyspepsia, which reigns endemically during the days of fasting and carnival.

“The amylaceous dyspepsia generally commences one hour after each meal; it may, however, be felt sooner or later. It begins most frequently by a more or less painful sensation of weight, of abdominal oppression, and epigastric fulness, attended with a desire to loosen the clothes. The development of gas produces bruits in the stomach, sharp pains, eructations and pyrosis. The rejected matters are inodorous, or, rather, they recall the taste of the food; they are sometimes vinous, acid, bitter, and even sharp and scalding. These morbid symptoms correspond to the successive periods of the glycosic, alcoholic, acetic,

lactic, and butyric fermentation. One finds also in the evolution of this dyspepsia the progressive regularity of phenomena which is manifested in the artificial fermentation of amylaceous substances.

"The digestive tube, irritated by an alimentary mass, and permeated by abnormal juices, revolts against these, and endeavours to relieve itself by the superior outlet. Hence result nausea, attempts to vomit and even actual vomiting. At other times there is ptyalism, and an accumulation of clear mucous, acid, alkaline or saline fluid, and occasionally of phlegm, either between or during meals.

"During this period the food arrives in the duodenum, and there gives rise to analogous phenomena: palpitations, colds, painful stitches, and an effusion of intestinal gas. It is necessary to remark that this gas is generally free from bad odour announcing a putrid decomposition of the nitrogenous elements. Constipation is, so to speak, the rule in amylaceous dyspepsia.

"The development of gas often excites painful cramps in the umbilical and hypochondriac regions, and gives rise to lancinating and painful stitches in the shoulders, below the heart, and even under the sternum. These pains may be produced independently of the intervention of gas, by the special sensibility of the splanchnic nerves; whatever may be the cause, intercostal neuralgia seated over the cardiac region is frequently met with in amylaceous dyspepsia.

"Hiccough, spasmodic cough, palpitations, præcordial oppression, stifling sensations, and vertigo, are to be explained by reflex action. It is to this reaction of the stomach upon the brain, that are to be attributed yawning, muscular apathy, pallor or congestion of the face, somnolence, cephalalgia, and neuralgic tic, during the day, and sleeplessness, agitation, and nightmare during the night.

"Notwithstanding this accumulation of morbid manifestations, the amylaceous dyspeptic has apparent good health; he rarely gets thin. Still the tongue may be white, or spotted with red points at the apex, and the appetite is irregular. By making inquiries of the patient one learns that he digests starchy food badly, and he suffers more from eating a scanty meal than when he has eaten meat.

"This form of dyspepsia is, without contradiction, the most common of all; out of 100 patients who are treated in private practice, 25, at least, are dyspeptics; and in every 100 cases of dyspepsia, one may count upon, without exaggeration, 60 in which the amylaceous form is complained of.

In addition, amylaceous dyspepsia is nearly always an essential form; general causes specially give rise to the hypochondriacal form of dyspepsia. There is probably only one general cause which may induce amylaceous dyspepsia: this is the anæmia of young people and the chlorosis of young women and girls.

Amylaceous dyspepsia is to be cured by attention to regimen, alkaline salts, and by maltine; in the majority of cases by maltine alone.

ART. 64.—*On Functional Dyspepsia.*

By GEORGE P. ANDREWS, M.D.

(Detroit Review of Medicine and Pharmacy; and The Medical Record, September 15.)

Dr. Andrews insists upon rest to the stomach in this affection, and the avoidance of food difficult of digestion or in excessive quantities. The milk diet is often attended by the happiest results. It may be taken clear, or with one third of lime-water, and in small quantities often. Strict attention to hygienic matters must be enjoined, and no alcoholic stimulants allowed except as directed by the physician. Usually, little medication will be needed, except to relieve torpor of the bowels, which should be accomplished by the mildest laxatives when enemata are insufficient. Pain may be allayed by the various narcotics, bismuth, hydrocyanic acid, or carbolic acid exhibited in one or two drop doses suspended in mucilage, repeated every three or four hours. This latter remedy will, also, usually allay nausea and vomiting.

ART. 65.—*On the Diagnosis of Diseases of the Stomach and Œsophagus.*

By SAMUEL WILKS, M.D., F.R.S.

(The Lancet, June 4.)

An emaciated man, fifty-three years of age, was admitted into Guy's Hospital on May 11th, with supposed disease of the stomach. The following were the chief points in the history of the case:—For eight months past severe pains over the stomach, and almost immediate return of swallowed food, particularly of meat and dry solid matter; profuse hæmatemesis on two occasions; loss of flesh. Dr. Wilks stated that in cases of this kind it was necessary for the medical attendant to find out for himself whether there was immediate regurgitation of the food after deglutition, or vomiting occurring sooner or later after this act, but still not until the passage of the food into the stomach. The former symptom would indicate some contraction of the œsophagus; the latter, disease of the stomach—probably cancer or gastric ulcer. Hæmorrhage from the stomach varied very much in amount, according to the nature of the case. In cases of gastric ulcer it might be slight or severe; but when due to liver disease it was always excessive, since the bleeding must necessarily be associated with extreme engorgement of the portal system. Pain in the epigastrium was invariably present in cases of vomiting, even with sea-sickness. Severe fixed pain was not a constant symptom of ulcer of the stomach; occasionally it was very slight, and not a source of complaint, whilst in other instances it was very acute. In the latter class of cases the peritoneal coat of the stomach was generally involved in the ulceration, and had probably become adherent to some neighbouring part. In one

case, related by Dr. Habershon, twigs of the pneumogastric nerve were found involved in the margin of the ulcer. Dr. Wilks was inclined to look upon the present case as one of disease of the œsophagus, since the food was either regurgitated immediately after deglutition, or, when retained for a short time before its return, was distinctly felt by the patient himself in a fixed position at the lower end of the gullet. Small fragments of toast or dry bread could be passed into the stomach with difficulty, but the bolus, when mixed with tea or some other fluid, was immediately returned. Dr. Wilks did not look with any favour on the plan of passing bougies for the treatment of disease of the œsophagus from morbid deposit. The contraction of this tube, from this cause, is not of inflammatory origin, nor analogous in any way to a stricture of the urethra, and cannot be treated with success by a process of stretching.

ART. 66.—*On the Treatment of Gastric Affections which occur during Pulmonary Phthisis.*

By M. PETER.

(*Echo Médical et Pharmaceutique Belge*, Juin, 1870.)

In the phthisical patient one may notice two kinds of cough: one which leads to the rejection of matter contained in the bronchi—a salutary phenomenon; the other, a veritable gastric cough, consequent upon a morbid irritability of the stomach, tending to cause sickness. The cough which attacks phthisical patients at the time of a repast, and occasions the rejection of introduced aliments, is certainly the result of gastric irritation. The results of treatment afford a proof of this, since a modification of the gastric sensibility suffices to remove at once both the cough and the vomiting.

A young woman, aged twenty-three years, who was phthisical, came under my care on Nov. 9th. Digestive disturbances had brought on a condition of extreme debility. The patient suffered from pain in the stomach, had cough, and vomited all her food. It was necessary, then, to diminish the sensibility of the gastric mucous membrane without stupifying the patient. For this purpose, it sufficed to employ a small quantity of some rapidly-absorbable narcotic, and to administer it immediately after the ingestion of food. A drop of laudanum, in a teaspoonful of water, was given after each meal.

The same end was not fulfilled by pills. In the first place, the action of the liquid is more rapid; and then the absorption does not necessitate a preliminary labour, fatiguing for a very impressible mucous membrane. A similar effect might be obtained with other medicinal agents—as, for example, a solution of morphia.

For the first few days the vomiting was definitely arrested; but though the pain had been relieved, the dyspepsia remained. M. Peter then tried a plan of treatment borrowed from Trousseau, which has been too much neglected: three drops of hydrochloric acid, in a little water, were administered after each meal. The digestive functions

were re-established, and on Dec. 16th the patient was discharged, having regained her strength, colour, and even general fulness.

In another phthisical patient, a male, sickness, lasting over fifteen days, had caused profound debility. He was ordered to take two drops of laudanum, in a little water, after each meal. On the following day the vomiting had ceased. The medicine was continued, and the sickness did not return.

Laudanum in these doses acts topically, by contact with the gastric mucous membrane, and not by stupifying the nervous system. Large doses serve only to suppress the appetite, and to narcotize the patient, instead of relieving the morbid sensibility. If analogous conditions be met with in other cases than those of tubercular phthisis, we may employ with success the same means. In three cancerous patients I have seen vomiting suppressed by a similar medication.

Gastric disturbances may take another form. A young man, twenty-six years of age, who had been ill for five years, came under my treatment for the relief of painful gastrorrhœa. Every morning he brought up a viscid and transparent fluid, mixed with bile; he had, in addition, prolonged and painful digestion, and anorexia. M. Peter presented with each meal one of the following powders:—

Subnitrate of bismuth	10 grammes
Opium	10 centigrammes

in five powders.

After the meal two drops of hydrochloric acid were administered. From the commencement of the treatment the patient ceased to vomit, and digested his food with greater ease. On the 7th of March the treatment was discontinued, and at the end of April the patient was discharged as much relieved.

This patient had, in addition to an increased gastric sensibility, a hypersecretion of the wall of the stomach; an indication for the use of bismuth as an absorbent, and also for the administration of opium. If this hypersecretion had been allowed to subsist one would have obtained but temporary relief.

In a female patient an attack of painful gastrorrhœa was treated by the same means, with the doses still more reduced (one gramme of bismuth and one centigramme of opium). The success was complete. It is of importance that the medicine be given immediately after the meal.

For another woman, who suffered from violent neuralgiæ, with anorexia and difficult digestion, M. Peter prescribed two drops of the bitter tincture of Beaumé before, and two drops of hydrochloric acid after, each meal. In the course of a few days the appetite had improved, and the digestion was performed more readily; then, at the same time that the organism was repaired, the neuralgic pains diminished in severity.

Another very important remedy is alcohol. In a phthisical patient, with whom laudanum, morphia, blisters, subcutaneous injections of morphia, and other means had failed, alcohol was given in quantities of sixty grammes, and continued for some time. This treatment was attended by complete success. The good results persisted, and the patient left the hospital much relieved.

In diarrhœa, in addition to the ordinary means, M. Peter gives the nitrate of silver. When, towards the decline of the disease, this symptom is caused by actual ulceration, one might, as was recommended by Graves, extend the dose to fifteen or even twenty-five centigrammes; but by giving from one to five centigrammes, in the form of pill, one will succeed very well in arresting the diarrhœa.

ART. 67.—*Specimen of Phlegmonous Gastritis.*

By WALTER MOXON, M.D., M.R.C.P.

(*Medical Times and Gazette*, October 29.)

At a meeting of the Pathological Society on October 18, Dr. Moxon showed a specimen of phlegmonous gastritis which occurred in a young man as a part of a phlebitis and pyæmia of the portal system of veins. There were three or four abscesses in the submucous coat of the stomach, near its œsophageal part; none of them had burst. The cause of the disease was suppuration in and about the walls of the rectum. This reached and extended in the hæmorrhoidal veins, and had led to a large abscess forming along the portal vein, and entering both the liver and the pancreas, destroying the vein-wall for several inches in length. Dr. Moxon suggested the question how far this grave occurrence corresponds to common fistula in ano, reaching by chance the veins of the rectum, and expressed his belief that such a view would be very insufficient. It is more true to the nature of such a case to regard the man as already in a state nearly or quite reaching pyæmia before the suppuration is set up, so that the suppuration about the rectum meets another constitutional factor, which extends it in the way discovered. The known occurrence of some cases of pyæmia without any wounds in an idiopathic way, reveals the importance of the constitutional factor; as also does the occurrence of pyæmia and puerperal fever from contagion. Indeed, in this case it was open to serious doubt whether all the suppurations were not set up as an idiopathic portal pyæmia, for none of them seemed to be older than the others.

ART. 68.—*Case of Perforation of the Intestine.*

By SAMUEL GORDON, M.D.

(*Dublin Quarterly Journal of Medical Science*, August.)

At a meeting of the Pathological Society of Dublin, Dr. Gordon exhibited a specimen of perforation of a portion of intestine caused by a lumbricus. He said that two children had been lately admitted into the Hardwicke Hospital, under his care, from totally different parts of the city, and both affected by the same train of symptoms—a low form of fever, with a great deal of pulmonary congestion; more, however, of the character of bronchitis than of general pulmonary congestion. With

regard to one of the children, a large lumbricus travelled upwards and came out of its mouth, after which the child rapidly became convalescent. With respect to the other, who was lying in a contiguous bed, it is remarkable that the same circumstance happened. A large lumbricus came up through the œsophagus, and escaped by the mouth; but the same benefit did not result as in the other case, for the fever did not subside, and the bronchitis still progressed, but there was nothing to cause serious alarm for a few days, when one morning Dr. Gordon was struck with the low prostrate condition of the child—a condition which was marked by extreme debility and fainting fits, and which ended fatally in about thirty hours. Upon examination after death, Dr. Gordon was surprised to find that the child had died with peritoneal inflammation. It was not to a great extent, or of an acute character, but there was sufficient evidence to show that a low form of peritonitis had existed. A careful examination as to the cause of this inflammation led to the discovery that the intestine had been perforated by lumbrici. The inflammatory action was most intense in the immediate vicinity of the perforation.

ART. 69.—*Cases of Acute Dysentery.*

By JOHN MURRAY, M.D.

(*Medical Times and Gazette*, October 29.)

At a meeting of the Pathological Society, held October 18th, Dr. John Murray exhibited intestines from patients, mostly Bavarian soldiers, who had died of acute dysentery at the hospital at Pont Mages, near Sedan. They presented the features of well-marked cases of the disease; great tumefaction and redness of the mucous membrane of the large intestine, extending to a less extent upwards towards the stomach, which was also congested. The mucous covering of the large intestine, and chiefly of the colon and rectum, was softened, ulcerated in variable-sized patches, and covered with numerous small white aphthous-looking patches. Throughout the mucous membrane was more or less completely gone, patches sometimes the size of an adult hand having sloughed away, exposing the muscular coat of the intestine. Sloughing was a marked feature in most of the cases, with extravasation of blood into the submucous tissue, the intestine, and also the skin. The ileum, towards its lower end, was in a large number of cases ulcerated, but superficially, Peyer's patches being chiefly affected; and there was in addition observed, in not a few, great enlargement of the mesenteric glands and congestion of the spleen. In none was there marked deposit into the patches, as observed in typhoid fever. The intestines contained a greenish feculent fluid mixed with blood, mucus, and the products of disintegrated and inflamed mucous membrane. The symptoms during life in the early stage were those of diarrhoea and general prostration, with moderately high temperature, followed by tenesmus, passing of bloody and mucous stools, increased elevation of temperature, and gastric symptoms, reducing the patient rapidly, and ultimately producing death by exhaustion.

ART. 70.—*Jaundice from Mental Emotion.*

Clinical Remarks by Dr. WILKS, at Guy's Hospital.

(British Medical Journal, July 2.)

The term simple jaundice is applied to the case where the circulation of bile through the system constitutes the only phenomenon of the disease; for, were it not that the bile is coloured and stains all the tissues yellow, it would constantly happen that the liver would never be suspected as being the cause of the patient's illness. In such a case it is that the pathology of the disease is so difficult to discover; for in the more important, and especially in the fatal forms, the explanation is clear. For example, the most evident and effective cause for jaundice is the obstruction of the bile-ducts, whereby the secretion does not flow into the bowel, but is taken up and carried through the system. In most cases which are fatal, an obstruction is found; and likewise, in a very large number of instances in which recovery occurs, we are sure, from the symptoms, that a temporary blockage has occurred. From these striking facts, it would be an easy interpretation of all cases, could it be justly maintained that jaundice was always due to a mechanical impediment to the flow of the bile; and, taking the analogous case of obstruction in the air passages of the lungs, we might even go so far as to suppose that, besides the more obvious causes of obstruction, there might exist a catarrh of the passages, or even a spasm having its origin in the nerves. If this could be proved to our satisfaction, the dictum might be maintained that, for the production of jaundice, a healthy liver is required, combined with obstruction of the main duct: and this would be supported by the opposite fact, that jaundice is not a symptom of disease of the organ itself. This theory is intimately bound up with the physiological question as to the precise seat of the formation of the bile. If the statement above given were absolutely true, it would afford the best proof that the bile is formed in the liver, and not in the blood; for, if it were not so, jaundice would exist in proportion to the amount of destruction of the true hepatic structure; and it would, in all probability, exist in those cases where the portal vein is occluded. But it is not met with under these circumstances. And, again, in the lower animals, as the frog, the liver has been excised without the production of any jaundice. The only case where jaundice occurs in connexion with any organic disease is in that remarkable affection known as acute atrophy; but here the change in the secreting tissue is so rapid that it is possible the amount of bile which is seen circulating through the system may have been already formed before the destruction begins. It is this disease, however, which has given rise to the opinion that some constituents of the bile may be formed in the liver, and the others in the blood: that the taurocholic and glycocholic acids may be formed by the liver, but that the colouring matter is produced in the blood. Under these circumstances, jaundice might arise either from obstruction of the ducts or from disease of the liver itself; and thus it would be only in the one variety that the biliary acids would be formed, and therefore found in

the urine along with the salts. Dr. Wilks stated, that these had often been sought for in the urine, but never yet been found in any single case in the hospital; and that, therefore, on such a doubtful point as to their existence or not, we could not form a diagnosis as to jaundice being a disease of suppression or retention. There is every reason, at present, to believe that none of the biliary ingredients are formed elsewhere than in the liver; and, if so, we have rather a difficult task to undertake in explanation of such a case as the one under discussion, where there is no evidence of obstruction to the passage of bile—the case, for example, where a woman, from a sudden fright, has an attack of jaundice. The only explanation which appears tenable is, that the constituent colouring matter of the hepatic cells is retained and absorbed, instead of being carried out into the ducts. An analogous and opposite instance of this perverted action of the cells may be seen in one of the theories of diabetes, which supposes that the amyloid matter naturally retained in the hepatic cells is taken up into the circulation, and somewhat changed in nature. It is known that, if the fourth ventricle be pricked with a needle, diabetes is produced. Now, if this condition be owing to a changed action wrought on the liver through the nerves supplying it, whereby a material which should be retained passes out, it is no more difficult to understand how a nervous influence exerted on the secreting tissue of the liver should also prevent some of the material which naturally passes out from escaping; and, if this material be the colouring matter of bile, a jaundice results.

Enough has been said to show what a large field of investigation is opened to us by a discussion of the subject of jaundice; since, for its true interpretation, we ought to have a knowledge of the seat of the formation of the bile, and, indeed, of the true function of the liver. It is remarkable that, considering the importance of the largest secreting organ in the body, very little positive knowledge exists of its function, and also of its diseases. Although almost every other patient whom we have to treat is ready to talk about his liver, it may be truly said that its deranged conditions are less recognised than those of all other important organs; and even in the common affection known as cirrhosis, its existence is never more than conjectured until the blood can no longer pass through it; and, as regards the various conditions which produce jaundice, it is probable that many of them would be wholly unrecognised, were our diagnosis not aided by the bile being of a yellow colour.

As regards treatment, this is for the most part empirical; for it is often merely a conjecture whether the arrest of flow of bile is due to the obstruction of the fluid, to catarrh of the ducts, to spasm, to paralysis, or to an abnormal transfusion of bile, from the regulating nervous influence being suspended or misdirected. In recent forms of jaundice, the old and approved remedies are mercurial purges, with alkalies, &c. In more chronic forms, taraxacum and nitric acid have long been in use. Dr. Wilks considered the former a very harmless remedy, but had a considerable liking for the latter. He also used the nitro-muriatic bath, and had every reason to believe that it was eminently useful. He judged so from recovery having taken place in several cases where all other measures had been unsuccessful. A remedy suggested for theo-

retic reasons is benzoic acid, it being considered to unite with glycine to form hippuric acid, and thus break up the noxious biliary mass. Dr. Wilks had given it in other cases, and again in the present one. The woman recovered whilst taking it, but whether as a consequence would be too much to assert.

ART. 71.—*On Hepatic Colic.*

By Dr. SENAC.

(*Du Traitement des Coliques Hepatiques.* Paris : 1870.)

1. Hepatic colic may be considered as a morbid physiological act, effected for the purpose of freeing the biliary passages of foreign bodies contained within them.

2. The violent pain that accompanies this act is due to the expulsive actions themselves rather than to distension of the biliary tubes, to which they have been often attributed.

3. The painful contractions may probably be produced independently of any biliary lithiasis.

4. The cause which determines the expulsive crises may present the character of periodicity.

ART. 72.—*Notes of a Case of Biliary Fistula.**

By G. H. PHILIPSON, M.A., M.D.

(*British Medical Journal*, September 24.)

The patient, a woman aged thirty-four, was in the Newcastle Infirmary, under his care. The fistulous opening was situated at the umbilicus, and had existed for ten months. Eight gall-stones, of about the size of small hazel nuts, had been extracted from the sinus. It was considered that the ductus communis choledochus was still pervious; and that in all probability, in consequence of gall-stones having become impacted in the biliary passages, the gall-bladder had become widely distended, and, from consequent inflammation, adherent to the abdominal wall, which subsequently ulcerated. In contrast, the chief points of a case of fistula of the right pleura, in a boy aged seventeen, also in the Newcastle Infirmary, under the care of Dr. Philipson, were given.

In reply to a question from the President, Dr. Philipson said that the only aperient medicine which he gave when the increased flow of bile came on, was castor-oil in repeated doses.

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-on-Tyne, August, 1870.

ART. 73.—*On Hepatic Fistulæ.*

By M. SIGNEROLLES.

(Archives Générales de Médecine, Juin.)

Umbilical fistulæ are rare; they may follow an inflammation of the abdominal wall, a fæcal abscess, permeability of the urachus, &c. There is also biliary fistula, which is still more rare. We are therefore induced to publish a case reported by M. Signerolles in his recent thesis. The author, after having discussed fistulæ succeeding a calculous swelling, an hydatid cyst, and an abscess of the liver, reports the following case:—

“The subject of this report was a woman of a lymphatico-sanguine temperament, who had complained of pains in the abdomen for seven or eight months. About three weeks before her admission under the notice of Dr. Signerolles, she observed a small swelling below the umbilicus. The woman had never suffered from hepatic colic or jaundice; the pains of which she complained not being generally accompanied by alternating diarrhœa and constipation.

“At her admission, towards the end of December, the patient presented a tumour, situated in the umbilical region, of the size of an adult’s fist; this diminished slightly under the influence of baths, poultices, and rest. At first very red and painful on pressure, it soon lost its inflammatory character. After an interval of nine days, this tumour commenced to increase in size again; the skin became soft and thin; and the tumour, after opening spontaneously, gave exit to pus mixed with blood and solid fragments (albumen and fibrine). Another fistulous opening was established a few days after the first, and the two orifices, which were situated, the one about two fingers’ breadth, and the other about two centimetres from the umbilicus, were some centimetres apart. A probe introduced into one of these openings could be passed to a depth of seven centimetres, and then arrived at a hard bony wall. The probes introduced at the same time by the two openings could be brought together at the bottom of the cavity.

“The general condition of the woman was satisfactory; she was, however, pale and somewhat jaundiced, and was also slightly emaciated.

“In the presence of these symptoms, Dr. Richet, under whose care the woman was, at once took into consideration the diagnosis of acute phlegmon, a glandular abscess, a chronic abscess, an acute cancer, a syphilitic tumour, a fæcal tumour or a fœtal cyst.

“He rejected at once the idea of acute phlegmon, on account of the local inflammatory symptoms and the slow course of the tumour.

“A glandular abscess commences in induration, followed sooner or later by suppuration.

“Acute cancer occurs most frequently in the female mamma. It gives off particles of cancerous tissue, which, however, was not the case in the subject of this report.

“A syphilitic tumour is generally as slowly developed as was this sub-umbilical tumour, but is accompanied by a coppery tint of the skin, is less firm, and always preceded by symptoms of syphilis, which in this case could not be made out.

"The diagnosis as to a fæcal tumour was more difficult. There was, indeed, a probability that this woman had an intestinal affection. There might have been ulceration of a portion of intestine that had contracted adhesions with the abdominal wall and determined a fæcal abscess. But the pus discharged from the tumour of this patient had no particular smell; it was not mixed with fæcal matters, and these could not, in the case of fæcal abscess, explain that hard portion against which the probe struck, except by admitting the presence of several small pieces of bone in the abscess.

"The existence of a fœtal cyst was a more probable diagnosis, to which M. Richet held.

"As the tumour continued to discharge a large quantity of pus, M. Richet united the two fistulous openings by making a long incision; the finger, when introduced into the wound, penetrated into a tract directed upwards and to the right side, at the bottom of which could be felt a free hard body with an unctuous feel. This body was moveable, and presented angles which were buried in the granulations. M. Richet attempted to extract this with forceps, but did not succeed; the instrument glided over a part of the body without seizing it. This exploration gave rise to an abundant flow of blood.

"On the following day the body had approached nearer to the cutaneous orifice, so that it could be readily felt with the finger.

"Six days later the patient presented to Dr. Richet at his visit a hard black body of the size of a die. This was at once recognised as a biliary calculus. Dr. Richet sought both with finger and probe whether there were not other bodies of a like kind, and then felt a second calculus. Some days afterwards this was discharged from the external opening. M. Richet subsequently removed with forceps a third calculus resembling the former two. The wound when explored presented no hard or resistant body, and nothing could be felt by the finger save granulations.

"The wound soon closed, and the patient, about two months after her admission, was discharged as completely cured.

"It should be noted that the expulsion of the calculi caused no pain; that the patient never had marked jaundice, and that at no period of the illness did the fæces present any special characters."

With regard to hepatic fistulæ, it may be remarked that the external orifice is sometimes found at a great distance from the hepatic organ. M. Kamarion of Strasburg has collected 35 reports of thoracic fistulæ having their origin in the liver; of these 23 were due to abscess of the liver, 12 to hydatid cysts.

The abscess of the liver discharged itself in 8 cases into the pleura, twice into the pericardium, and always caused death. Out of 12 cases of the passage of pus into the lungs there were 6 recoveries.

Out of 12 cases of hydatid cyst discharging itself into the chest, 10 burst into the right lung, 1 into the pleura, and 1 into both pleura and lung. In 3 out of 10 cases, in which hydatids were expelled by the bronchi, was this discharging followed by recovery.

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 74.—*Bright's Disease.*

By SAMUEL WILKS, M.D., F.R.S.

(The Lancet, June 4.)

In some remarks made in a lecture at Guy's Hospital on a case of renal dropsy and bronchitis, Dr. Wilks pointed out the rigid state of the radial artery; and stated that the early researches of Dr. Bright on the morbid appearances of the renal arteries, and the recent investigations of Dr. Johnson on the general condition of the small arteries of the body in disease of the kidney, taken together with several pathological facts, among which he mentioned that of the existence of Bright's disease in a great majority of patients who have died from apoplexy, all went to justify the classifying of this affection with the general, instead of with the strictly local, diseases of the body. In this special case, Dr. Wilks stated, incidentally, that there was a slight but persistent friction-sound on the left side of the chest. This he believed to be a dry pleuritic rub, caused by some roughening of the pleura without adhesion. Although it was easy to comprehend how this condition might really happen and remain persistent, opportunities for hearing a dry sound of this nature very rarely occurred.

ART. 75.—*Case of Acute Renal Dropsy.*

Under the care of Dr. HENRY THOMPSON.

(British Medical Journal, August 6.)

At a meeting of the Pathological Society of London, held May 17th, Dr. Cayley brought forward a case of Acute Renal Dropsy without Albuminuria, with Interstitial Nephritis. The patient, a boy aged nine, was a patient in the Middlesex Hospital, under the care of Dr. Henry Thompson. His previous health had been good, and he had never had scarlatina. About fourteen days before his admission he caught cold, and seemed generally unwell. A few days afterwards his throat became sore, and this was shortly after followed by a purulent discharge from both ears. No rash was observed; and, so far as could be ascertained, he had not been exposed to scarlatinal infection. His brothers and sisters also remained well. About a week after the accession of his symptoms, general dropsy supervened, beginning in the eyelids and face; this continued to increase, and during the two nights preceding his admission he was delirious. The condition of his urine was not noticed. He does not appear to have suffered from pain in the loins. On admission, he was well-nourished, but had a pasty anæmic complexion. There was considerable general anasæra, and some degree of ascites. Pulse 120; respirations 24. The thoracic percussion and respiratory sounds were normal. A soft double murmur was audible over the præcordia, most distinct at the base of the heart. There was a purulent discharge from the ears; but the sore throat had almost sub-

sided. No desquamation was present. The urine was not high coloured, of specific gravity 1018; it contained a deposit of lithates, dissolved by heat. On continuing to apply heat, a white cloud formed, redissolved by nitric acid. On adding nitric acid to the cold urine, a deposit was thrown down, redissolved by heat. On microscopical examination, lithates and numerous large crystals of lithic acid were found, but no blood or casts. The urine was passed in rather large quantities, the specific gravity varying from 1012 to 1018. It was never found to contain either albumen, casts, or blood, but continued to show a considerable deposit of lithic acid. The dropsy much diminished, without completely disappearing. The patient was delirious at night. The heart's action became very irregular and tumultuous; and the double basis bellows-murmur, though altering much in character, was persistent. Ultimately, lobular pneumonia and œdema of the lungs supervened; and he died, after having been in the hospital eleven days, between three and four weeks from the commencement of his illness. He did not become comatose, and had no convulsions. On post-mortem examination, the lungs were found highly œdematous, with patches of lobular pneumonia dispersed through them. The heart showed recent myo- and endo-carditis; the muscular walls of the left ventricle being studded with buff-coloured patches, intermixed with points of extravasation. On microscopical examination of these patches, the muscular fibres were found thickly studded with oil-globules, and in some places appeared reduced to an oily and granular débris. The aortic valves were much swollen, softened, and studded with recent vegetations. The kidneys, especially the left one, were enlarged. The right one $4\frac{1}{2}$ oz.; the left, $5\frac{1}{4}$ oz. Their capsules stripped off with abnormal facility; their surfaces were smooth, pale, but somewhat mottled. On section, the cortical parts were found increased in thickness; they were pale and somewhat opaque; the pyramids were congested. The kidneys, therefore, to the naked eye, presented much the characters of the large white kidney of the second stage of acute tubal nephritis. On microscopical examination, the condition was found to be very different. The morbid change consisted in the deposition of masses of nuclei, having the characters of lymph-corpuscles, between the uriniferous tubules and round the Malpighian capsules; they were especially abundant in the latter situation. The epithelium of the convoluted tubes appeared normal, or at the most was very slightly swollen and granular. The morbid condition was, therefore, essentially one of acute interstitial nephritis, the inflammatory exudation being in every respect identical with that met with in other interstitial inflammations—as, for example, cirrhosis of the liver. Cases of acute renal dropsy without albuminuria, both as the result of scarlatina and from exposure to cold, have been frequently recorded; but no very satisfactory explanation of their pathology appears to have been given. This case would tend to show that some of these perplexing cases, even when the result of scarlatina, as in all probability the present one was, may be due to interstitial nephritis. It is interesting also as an example of the acute stage of the contracted granular kidney, which is probably of rare occurrence. Certainly, in the great majority of cases of this form of Bright's disease, the nuclear deposit and its conversion into fibrous tissue go on with equal steps. The non-occurrence of albu-

minuria in the acute form and its late occurrence in the chronic form of the disease admit of a satisfactory explanation, on the supposition that the fluid which transudes from the Malpighian tufts, as they are not covered by any *secreting* cells, consists essentially of serum, and is therefore albuminous. In the healthy kidney the albumen and non-urinary constituents are reabsorbed during the passage of the fluid down the convoluted tubes. When the tubal epithelium is diseased, this reabsorption is interfered with, and albumen consequently appears in the urine. But in interstitial nephritis, which results in the contracted granular kidney, the renal epithelium does not become affected till the interstitial deposit, by its contraction, has begun to press upon it and constrict the convoluted tubes; and so albuminuria does not show itself till the disease has made considerable progress. The deposit also leads to thickening of the small arteries and capillaries; and this, while not interfering with the free transudation of water, tends to check the passage of the dissolved solids; and hence the urine in these cases is usually abundant and of low specific gravity. A similar condition of urine is found in cases where the vessels are thickened from other causes, as amyloid infiltration. The discovery of the termination of the convoluted tubes in Henle's loops speaks strongly in favour of this view, as this arrangement must necessarily greatly retard the flow of fluid down the convoluted tubes, and so favour reabsorption, while it would be unfavourable to secretion.

ART. 76.—*On the Origin of Diabetes, with some New Experiments regarding the Glycogenic Function of the Liver.*

By W. T. LUSK, M.D., Professor of Physiology, Long Island Medical College.

(*New York Medical Journal*, July.)

After giving a summary of the views and experiments of Bernard and Pavy, and of the opposite doctrines enunciated by them with regard to the production of sugar—as to whether it is produced in the liver during life, or whether it is a post-mortem production—Dr. Lusk relates a series of experiments performed by himself, “undertaken to determine the precise truth regarding these opposing statements.”

These observations consisted in the estimation of the quantity of sugar contained (a) in the blood of the right heart, obtained from a living dog by catheterisation through the jugular vein; (b) in the blood of the jugular vein, obtained from a living dog; (c) by determining the relative quantities of sugar in the blood of the same animal when drawn from the right side of the heart, and when taken from other parts of the body. From these experiments the author draws the following conclusions:—1. That the blood of the general system in carnivorous animals confined to a nitrogenous diet, contains appreciable quantities of glucose, not only during the period of digestion, as admitted by Bernard, but even in cases where animals have been deprived of food for a considerable period of time. 2. That the blood of the right side

of the heart contains from a quarter to half a grain of glucose per fluid ounce, under strictly physiological conditions. 3. That the quantity of glucose in the right side of the heart is from two to four times greater than that formed under corresponding circumstances at the jugular vein. 4. That this excess argues a by no means insignificant amount of sugar in the pure hepatic blood before it has become largely diluted with the comparatively non-saccharine fluids of the *venæ cavæ*. 5. That we are forced to admit the fact of sugar-formation by the liver, though we fail to detect the presence of sugar in the liver-tissue, when after death the fermentation of the glycogenic matter is presented. The author, however, does not believe that the liver is the sole source of the sugar found in the economy.

During foetal life glycogenic matter exists in the muscles and lungs. At birth the glycogenic matter disappears from the muscles, while it continues to form in the liver throughout the entire period of existence; but the glycogenic matter may re-appear at any time in the muscles when reparative matter accumulates, and the contractile elements are not exercised as in hibernating animals, and limbs paralyzed by division of the motor nerves. There are instances of diabetes where some other mechanism than that of the liver seems requisite to account for its origin. Tcherinow recently reported a case of diabetes in which there was atrophy of the liver-cells, with destruction, consequently, of all that could have made the liver a secreting organ. Tcherinow attributed the diabetes to the condition of the liver, which no longer acted as a barrier, storing up in its substance the saccharine matters brought to it by the portal vein, and converting them into glycogen, but allowed them to pass through into the general current unchanged. Bouchardat thinks that diabetes may be caused by the abuse of starchy articles of food, and prolonged stomach digestion. In such cases starch is converted into sugar by the altered gastric juice, instead of by the pancreatic juice. As absorption takes place in the stomach, glucose is at once transmitted to the blood in great quantities, because the liver through which it passes is already saturated with glycogenic matter, as a consequence of a prolonged amylaceous diet. A small atrophied pancreas is not uncommon in diabetes. Dr. Lusk met with a case of diabetes in which the only lesion discoverable after death was total calcareous degeneration of the pancreas. In a large class of cases also, diabetes is connected with disorder of the nervous centres. It may be produced by violent emotion, injuries of the head, sexual excesses. The causes, therefore, of diabetes are various, and the source of sugar not confined to a single organ; but the liver is to be regarded as the most active agent in sugar-production. It may also be the indirect cause of diabetes by its failure to fulfil its function of arresting the passage of saccharine principles through it.

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 77.—*Anæsthetic Properties of Carbolic Acid.*

By ERASMUS WILSON, F.R.S., F.R.C.S., Professor of Dermatology in the Royal College of Surgeons, England.

(*Journal of Cutaneous Medicine.*)

The following interesting case is related by Professor Wilson :—

“In the year 1868 I was consulted by a military officer, aged forty-four, for hypertrophy of the epithelium of the glans penis, and neighbouring fold of the prepuce. The end of the penis was perfectly flat; it had the appearance of being truncated and spread out; the most shallow groove separated the flattened glans from the broad, round border of the prepuce, and the whole of the flattened surface was coated over with a thick, horny, and in some places, warty layer of epithelium of extreme density and considerable thickness. The covering of the glans resembled a layer of horn, and partially constricted the meatus urinarius; that of the prepuce was like the structure of an old but very prominent wart, and bore evidence of being the product of elongated, as well as of enlarged papillæ.

“The history of the case was as follows :—The patient had been the subject of herpes præputialis, repeated, as is usual with that complaint, periodically; he was also, when these attacks took place, tormented with phymosis; and his surgeon, to remove the phymosis, performed the operation of circumcision. This happened in 1861, seven years previously to his coming under my care; and from the period of the operation up to the present time, irritation of that part had continued to prevail; the papillæ of the glans and inner surface of the stump of the prepuce had increased in size, and a thickening and condensation of the epithelium was the result. He had made many efforts to obtain a cure, and was almost in despair.

“I proposed to him to remove the horny layer and obliterate the hypertrophous papillæ by means of a solution of equal parts of potassa fusa and water, and this I have succeeded in accomplishing almost completely. The application of the caustic was excessively painful, so that only a small portion of the growth could be operated on at a time; and at the end of a few days there was so much inflammation that it became imperative to desist for a week or more before resuming the use of the remedy. This circumstance, and the necessary pursuit of his military duties, have protracted the cure for nearly two years; but during that period he has been making sure, although slow progress, and bit by bit the extent of the disease has been diminished.

“In the course of the treatment, I endeavoured to persuade him to apply the caustic himself, and supplied him with the material; but the attempt failed in consequence of the excruciating pain caused by its application. It was evident that some share of this extreme sensitiveness was due to the sensibility of the organ, and not a little to irritability induced by prolonged inflammation. This was our position one day recently: I had denuded the base of a large portion of the hyper-

trophous growth; but another application was necessary to reach the papillæ; and the patient's power of supporting any further pain was exhausted. There were reasons why chloroform could not be employed; local anæsthesia had, possibly from mismanagement, complicated the difficulty, and I was beginning to feel a little puzzled for the means of attaining my object, when it occurred to me to attempt to conquer the morbid irritability of the part by means of carbolic acid. It may be premised that in consequence of this dread of pain, I had left the application of the caustic to the patient himself, merely encouraging him to proceed, and pointing out the spots which he should principally attack; and when I suggested, after some minutes of agony, that he should touch the raw surface with carbolic acid, he shrunk from the proposal, having on several occasions used it before, and found it very painful. Nevertheless, the occasion was pressing, and he brushed the surface with carbolic acid, and was gratified by finding that he could do so without suffering. The carbolic acid exercised its usual effect of coagulating the albumen of the surface, and producing a white film; and after repeated applications the film had reached a considerable thickness. Now was the time for the renewal of the original caustic, and after some hesitation it was applied; but to the patient's astonishment and my own satisfaction, with an almost painless result. The caustic which a few minutes before was utterly unendurable, could be used now, and with perfect freedom—almost without inconvenience. We followed up our discovery, and left very little of the surface for future operation.

“This anæsthetic property of carbolic acid was not altogether new to me; but I had never before seen its power so strikingly manifested. I have used it often since, and always with the most satisfactory result; and I employ it at present, very commonly, previously to the application of caustic to lupus and epithelioma. It benumbs the surface, it dulls the excessive sensibility of the superficial nerves, and it thereby permits the caustic action of our remedies, with a great reduction in the amount of pain. It admits, I have no doubt, of more extensive application, and will, I have reason to believe, come into general use for a similar purpose.”

ART. 78.—*Tinea Circinata of the Hand.*

Under the care of Dr. TILBURY FOX, in the Skin Department,
University College Hospital.

(*British Medical Journal*, July 30.)

A youth, aged twelve, presented himself in the Skin Department, University College Hospital, on June 14th, with a large circular patch of tinea circinata, about three inches in diameter (ringworm of the general surface), involving part of the front of the wrist and part of the palm of the hand; and it was remarkable in this respect that whereas that portion of the disease about the wrist itself had the ordinary characters of tinea circinata, viz., a herpetic edge, and a slightly furfuraceous but pale centre, that seated at the palm had an appearance of slight psoriasis,

presenting the appearance of a peeling of the cuticle, rather than anything else; and the resemblance to psoriasis was all the more distinctly shown by covering over the part of the disease on the wrist. Dr. Fox remarked that he had elsewhere described a species of erythema as occurring on the hands and fingers, the skin becoming red "in little circular spots, from which the epidermis peels off by a centrifugal death, as it were, leaving behind a red dry surface, marked by circular ridges of what appeared to be normal papillæ; the disease looking like the death of the epidermis, between which is seen the reddened derma, marked by circular ridges of prominent papillæ." He had come to regard these cases of disease as parasitic, and examples of *tinea circinata* modified on account of the difference of structure of the skin or palmar surface of the hand. The parasite (*trichophyton*) disturbed the epithelial formation, inducing peeling, but did not give rise to an herpetic eruption or serous effusion beneath it. The difference in aspect of the two portions of the same batch of disease in the present case proved that the aspect of *tinea circinata* varied when it attacked the palmar surface of the hand. It differed from psoriasis in the absence of any thickening or heaping up of epithelial scales, or stasis in the vessels of the papillæ. When the epidermis simply peeled off in circular patches about the palmar aspect of the hand, the disease was likely to be parasitic.

ART. 79.—*Eczema: Its Nature and Treatment.*

By TILBURY FOX, M.D., M.R.C.P., Fellow of University College, Physician to the Skin Department of University College Hospital.

(*Lettsomian Lectures for the Session 1869-70.*)

The following is a summary of the general propositions which Dr. Fox brought forward in the Lettsomian lectures. He endeavoured in the first place to show, in opposition to the statements of modern writers, that the view which Willan took of eczema was the result of a comprehensive survey of that disease as a whole, and an accurate conception of its clinical features; that Willan's views have been signally misunderstood and misread by moderns; and that he anticipated for living dermatologists, and more than this, avoided the errors into which they have fallen in the confusion of stages and varieties as regards eczema. Dr. Fox believes that the best division of eczema is that into the three varieties of *E. simplex*, limited and inflammatory; *E. rubrum*, more or less general in its attack, and inflammatory as gauged by its local phenomena and the disorder of the system generally; and lastly, *E. impetiginodes*, in which the pus-formation is not accountable by the degree of inflammatory action, but is clearly dependent upon the existence of a pyogenic habit of body. Each of these varieties has, more or less perfectly marked, its stages of erythema, papulation, vesiculation, pustulation, and squamation; these stages cannot be regarded as constituting clinical varieties of eczema. In the second lecture Dr. Fox detailed the morbid anatomy of eczema, especially pointing out changes

that go on in the cell-structures of the skin, by which a network of vascular tissue, enclosing proliferating cells, was produced; and he argued that these, together with the changes in calibre of the minute blood-vessels, were consequent upon perverted innervation, and not a primary and essential alteration in the character of the circulating fluid. Dr. Fox went on to show that local irritants acted peculiarly efficiently with such concomitants; that various general disorders considerably influenced the progress and character of eczemas,—the tendency in the pyogenic being to the occurrence of the impetiginous form of the disease, in the old as well as young, and in the gouty to the inflammatory; that deficient kidney and even hepatic action tended to aggravate the malady we are noticing in particular; that dyspepsia and organic disease of the heart had a like operation; that there was, *cæteris paribus*, a close analogy between catarrhal inflammation of the mucous membrane and eczema, and that the two frequently coincided in the same subject; lastly, he distinguished between what is truly eczema and those ultimate changes which are really the result of chronic inflammation, induration, hypertrophy of the fibrous tissues, œdematous enlargement, ulceration, and the like. In the remarks which constituted Dr. Fox's third lecture, he endeavoured to indicate that we should, in accordance with the views expressed relative to the clinical varieties of eczema, and the existence of irritability of the tissues, attempt to conduct eczema, in whatever shape it occurs, through its earlier stages by a soothing antiphlogistic plan of treatment to the stage of squamation, when what are more truly curative measures should be adopted; that we should recognise the influence of constitutional conditions upon eczema, and counteract their operation by appropriate remedies.

The practitioner in every case of eczema should ascertain three things—the variety, the stage, and the complications: the *E. simplex* needing local treatment; the *E. rubrum* gouty remedies, or diuretics, or special nerve tonics; and *E. impetiginodes*, an antistrumous plan of treatment. The complications Dr. Fox narrated one by one. As regards the stage of an eczema, if there be discharge, no irritant or stimulant treatment should be used.

Dr. Fox counselled, in severe cases, the more frequent use of antiphlogistics, antimonials, diuretics, &c., internally, and locally the entire exclusion of the inflamed part by means of neutral unguents.

He spoke of the use when the chronic stage is reached, of simple astringents, and stimulants in the slighter and early forms of disease, of tarry preparations in the itchy and papular aspects of eczema, and of the soap treatment where there is much thickening and infiltration.

ART. 80.—*Unusual Form of Eczema Labialis.*

Under the care of Dr. TILBURY FOX, Skin Department,
University College Hospital.

(*The Lancet*, August 6.)

Two cases of some interest, as showing how, on account of the superaddition of accidental phenomena, eczema may vary in aspect,

have recently been attending as out-patients in Dr. Fox's clinique. In both the seat of disease was the upper lip, just below the nose. The patients, who were both men, stated that the disease arose from a cold; that then the lip enlarged gradually, so as to produce considerable thickening and swelling. It so happened that on one occasion a distinguished foreign dermatologist was present, and he suggested that the disease was of the nature of epithelioma; but the rapid cure and the history of the cases entirely set aside this explanation. When first seen the disease consisted of a swelling extending half an inch laterally from side to side of the frænum of the nose, and from above downwards to near the junction of the mucous membrane and skin. It was, in fact, an oval swelling, the skin being raised about three or four lines. The swelling felt elastic; it was not hard, but it was tender, and smarting was often felt in it. The colour was inflammatory. On close examination the hair follicles were seen to be more distinct than usual, and to be pustulating at their apices. There were here and there slight crusts. The hairs of the moustache, which had been cut off close to the lip, were not loosened nor altered in texture; but on pulling at them much pain was at once experienced. In fact, it was, perhaps, the papillated aspect given to the general swelling by the enlargement and projection, so to speak, of the follicles, that led to the idea of the disease being epithelioma; but, on careful examination, it was seen that the disease was clearly produced by indammation of the hair follicles, implicating the fibrous tissue round about to a greater extent than usual. The history showed the case to have commenced by the extension of a catarrh from the mucous surface to the hair follicles. There was no free crusting, as in ordinary impetigo labialis. The disease might have been termed by some non-parasitic sycosis, which is, of course, nothing more or less than catarrhal inflammation of the hair follicles; but, in the present instance, the aspect was not so distinctly pustular as is usual in inflammation of the hair follicles about the face, and the swelling of the deep fibro-cellular structures was very marked—much more marked than usual. The disease began as an eczema, involving the parts about the hair follicles. Dr. Fox has met with many instances of the condition now described, and he is very emphatic in condemning the use of irritants, stimulants, or active absorbents in the early stage of the disease. He states that all these remedies increase the follicular irritation. The use of litharge ointment so as to exclude the air, after hot fomentations, the avoidance of stimulating things, with alkalies and tonics internally, and subsequently strapping with lead or mercurial plaster, and the use, in the very chronic stage, of iodine, are most serviceable. But the avoidance of irritating applications, in the early stage, is the most important point to remember in reference to the treatment.

ART. 81.—*On Bromidrosis*.*

By EDGAR A. BROWNE, M.R.C.S.

(Liverpool Medical and Surgical Reports, October.)

The author began by observing that very few dermatologists noticed the complaint at all in their writings, with the exception of Wilson and Hebra, the latter of whom goes fully into the subject. He believed that the offensive character of the perspiration was, to a great extent, accidental, and not essential to the disease; and that it was really due to decomposition or putrefaction of the sweat after it had passed from the body. The patients are usually of the lymphatic type; the nervous system poorly toned, and apt to break down under stress; skin pale, sallow, or muddy—generally thick, loose, tender to external impressions, and liable to acne, eczema, and other diseases of a low type. Sex does not seem to have any influence. The offensive smell varies much in degree, being in some instances so slight as only to be noticeable upon extraordinary occasions, and in others rendering the room in which the person is, quite unbearable. When cases are investigated, it is found that the feet (taking the commonest and most typical seat of the disease) perspire very copiously; that there is very little more odour in the freshly-secreted sweat than is natural, but that when the socks or shoes are saturated with it, in course of a little time the odour is developed. If these dirty socks are kept for a day or two, and then warmed before a fire, or by the heat of the feet, the odour is intensified. The same amount of sweat in the hands, whence it is constantly removed by evaporation and washing, does not in these cases present any peculiarity except as to quantity. This is an important clinical fact, indicating that the fault resides mainly in a weakness of the skin or of its capillary nerves, and is not dependent upon a natural effort to excrete any *materies morbi*. Two points may then be noted:—(1.) That whatever is done, generally the part of skin affected must be brought into good condition by topical applications, and the amount of perspiration excreted reduced to a minimum. (2.) There is no danger, as might be expected if the theory of elimination were true, of doing harm by stopping the perspiration. For the milder cases, the feet should be washed in cold water (hot does harm), with juniper tar soap, and then powdered with a mixture of oxide of zinc, tannin, and violet-powder. The socks and boots to be changed frequently, especially after any exertion. For the more severe cases the author has tried carbolic acid—one ounce of the acid with three of water—and of this two teaspoonfuls are to be put in half a pint of water, and the feet are to be mopped with it after thorough washing; the strength to be increased every night till it causes pretty severe smarting. Hebra's method, however, is incomparably the best, though attended with a good deal of inconvenience in the application. An ointment of equal parts of linseed oil, and the ordinary diachylon plaster, scented with a little oil of lavender, is to be applied as follows:—The feet are to be washed in

* Abstract of a Paper read at a Meeting of the Liverpool Medical Institution, Session 1869-70.

cold water, and dried thoroughly; the ointment is then to be rubbed thinly over the affected skin, folds of lint, spread on each side with the ointment, are to be placed between the toes, and a bandage, prepared in like manner, to be equally adjusted over the whole foot; or it is a convenient plan to cut open a well-fitting sock and spread its interior with ointment, and put it on the foot, drawing on a cotton or thread sock over it, to maintain it in position. This is to be renewed every twenty-four hours for eight days, during which time the patient must not on any account wash the portions of skin under treatment. The old porous and sodden epidermis is thrown off, and replaced by a new scarf skin of finer texture. With a little care, and the occasional use of an absorbent powder, the patient may often consider himself permanently cured; but more frequently the good effects of the application wear off, and the treatment has to be repeated.

ART. 82.—*On Cutaneous Eruptions after Operations and during the Course of Surgical Septicæmic Affections.*

By M. TREMBLAY.

(*Gazette Hebdomadaire*, Nos. 35, 36, 1870.)

M. Tremblay concludes his article with the following contributions:—

“1. The skin, in the course of septicæmic affections, very often presents various eruptions, sometimes limited to certain regions, at other times generalized and occupying without distinction all parts of the body.

“2. The chief forms hitherto observed belong to the class of exanthems; one has met with simple erythema, circinate erythema, papular erythema, zona, urticaria, an eruption simulating acute psoriasis, and appearing on the elbows and knees, the usual seats of election of this last mentioned dermatosis. One has also seen purpura, and blue spots analogous to those observed in typhoid fevers.

“3. The march of the eruption is variable. Sometimes it appears shortly after the commencement of the septicæmic malady; at others, and this is the most common occurrence, it presents itself at a remote period, as one or two days before death. It generally disappears entirely at the approach of a fatal termination.

“4. The septicæmic affections which seem most commonly to engender these eruptions are:—Pyæmia, urinary poisoning, carbuncle and boils, peritonitis, chronic putrid or septicæmic infection.

“The marked alteration in the blood is evidently the cause of the cutaneous manifestations, but the pathogeny and the mechanism of these is still to be sought for; we know not whether they be due to capillary emboli, to simple congestion or vascular lesions.

“5. The diagnosis of these eruptions is easy with regard to their form, and often with regard to their cause, the septicæmic affections, before alluded to, being generally easy to recognise. If the nature of the general symptoms be obscure, the appearance of these exanthems will render probable the existence of pyæmia.

“6. The prognostic signification indicated by M. Verneuil, based upon a small number of facts, has been confirmed by more recent observations, and one many still assert, that the cutaneous eruption of septicæmic affections is the forerunner or index of speedy death.”

ART. 83.—*Contagious Impetigo.*

Under the care of Dr. TILBURY FOX, Skin Department,
University College Hospital.

(*British Medical Journal*, August 6.)

This affection, Dr. Fox is disposed to regard, in its general outline, as presenting many of the features of the minor acute febrile diseases of the young, especially varicella. In severe cases, there is slight or even marked pyrexia antecedent to eruption; the eruption itself, when undisturbed by scratching, running a definite course—commencing as a vesicle, then enlarging into a bulla; the contents becoming opaque, drying into a light-coloured flat scab, which, on falling off, leaves behind a slight ulceration or merely a dry red spot. The definite course of the separate spots of eruption is masked by the successive cropping up of fresh places, in part induced by the inoculation from scratching, and also by the fact that the patients scratch open the pustules before the scabbing has taken place, and so prevent their drying and healing up. The general answer to the question “How does it begin?” is, “By a little watery head.” Some parents state that they “thought it was a pock”; others, that “it looked like horn-pock”; but all declare that it commences by a single vesiculation, which enlarges, if left undisturbed, into a bulla, and is replaced by a scab. In this respect, it differs entirely from ordinary impetigo. The face is the part most usually attacked, but also the hands, head, and limbs. The pustules are isolated. It is often confounded with ecthyma: but the pustules are much more superficial; they are not painful, and have no induration about them. Contagious impetigo attacks the most healthy, and not specially those in whom impetigo is wont to occur. In those attacked, cuts and scratches are very prone to “fester.” The treatment is very simple and efficacious; viz., to remove the crusts, and apply a weak ammonio-chloride of mercury ointment (five grains to an ounce of lard) to the discharging surface below it.

ART. 84.—*On Purpura Hæmorrhagica.*

By M. HAYEM.

(*Gazette Medicale de Paris*, No. 37, 1870.)

M. Hayem has presented to the Société de Biologie preparations from two cases of purpura hæmorrhagica, with lesions of the arteries corresponding to the seats of hæmorrhage.

The first case was one of a phthisical woman, who died from multiple hæmorrhages. The organs submitted to M. Hayem for investigation were the skin and intestines.

In the cutaneous preparation was observed an ecchymosis which involved the whole thickness of the dermis, and the subcutaneous cellulo-adipose tissue. The violet ecchymotic tint was more marked in the dermis than in the latter tissue. Sections made perpendicularly to the surface and comprising the whole thickness of the preparation, presented under the microscope the following peculiarities:—1. An infiltration of the red corpuscles pressed together between the elements of all the tissues of the skin and the cellulo-adipose tissue; 2, a great number of small vessels, venules particularly, filled by red corpuscles; 3, empty flattened vessels, probably compressed by effusion of blood; 4, a certain number of obliterated arterioles presenting a more or less marked thickening of the external membrane by which their calibre was almost completely effaced, and containing either red globules or finely granular fibrinous masses. These obliterated vessels were pretty numerous, and were seated almost exclusively in the largest spaces of the cellulo-adipose tissue surrounding the ecchymotic patch.

In the intestine was observed a diffused and extensive infiltration of blood into the mucous membrane. Under the serous membrane were perceived red lines, due to the presence of vessels filled with coagulated blood. These vessels were followed far into the fragment of the mesentery removed with the intestine.

In sections comprising the sub-peritoneal tissue, the vessels visible to the naked eye were found to be arterial branches filled more or less completely by blood clots. The walls of these vessels were sound.

In the mesentery, by making sections perpendicularly to the surface and at the level of the vascular trunk, was found a great number of arterial vessels filled with coagulated blood, some flattened, others distended by blood clots. In some obliterated trunks there existed as in the skin a more or less marked hyperplastic endarteritis contracting or effacing the calibre of the artery. This lesion consists in a kind of hypertrophy of the elements of the inner arterial membrane, in which one may see an irregular fibrillar tissue and a great quantity of small rounded or slightly angular elements. At some points one may also find a marked thickening of the external tissue, which also includes elements analogous to those of the internal tissue.

The second preparation was removed from a patient affected with purpura hæmorrhagica, and consisted in a piece of skin removed from the deltoid region at the seat of a large patch of ecchymosis.

In examining a section made perpendicularly to the surface, it was found that the hæmorrhagic tint extended through the thickness of the epidermis and the cellulo-adipose tissue, and presented a conical form, the base of the patch corresponding to the epidermis. At the apex of the cone could be seen with the naked eye in the midst of healthy adipose tissue a tolerably large artery, about two millimetres in diameter. The wall of this vessel was white and very thick, and its calibre was just represented by a central red spot.

It was made out on microscopical examination that the thickening of this vessel was due to a very marked hyperplastic endarteritis, and

that the vascular calibre was completely obliterated at this part by a clot formed of fibrine and red blood corpuscles. In following the branches of this artery, which penetrated into the hæmorrhagic focus the endarteritis and coagulated blood were seen to extend for some distance.

From the facts observed in these two cases, both by the naked eye and by the microscope, M. Hayem has been led to think that hæmorrhage of the skin and intestine are the consequence of a diffused arteritis of the subcutaneous trunks and of the arteries of the mesentery. The hæmorrhagic centres are to be regarded as infarctions of the skin and intestine.

But M. Hayem has observed that hitherto these lesions have been exceptional in the anatomical history of purpura, and he adds that recently in a cachectic subject, who had presented during life all the symptoms of purpura, the walls of the vessels surrounding the hæmorrhagic deposits presented no appreciable lesions.

Besides, the pathological anatomy of purpura has not yet been perfected. It is permitted one to suppose that this symptomatic phenomenon may be probably due to venous lesions produced under the influence of different affections. However, it will henceforth be useful to consider these examples of endarteritis, thromboses, and cutaneous embolisms recognised in old subjects as causes of senile purpura, and of hæmorrhagic changes of the skin and mucous membranes, which have been observed in several cases of ulcerative endocarditis.

ART. 85.—*Clinical Remarks on Prurigo.*

By TILBURY FOX, M.D., M.R.C.P.

(*The Lancet*, July 30.)

In the course of one of his usual Friday demonstrations at University College Hospital, Dr. Tilbury Fox remarked:—"A good deal that is unclinical has been written of late about prurigo, and I am anxious that you should be on your guard about it. You must make a clear distinction between 'prurigo,' phtheiriasis or lousiness, and what is termed a 'pruriginous eruption.' The term 'prurigo,' as generally and loosely used in England, includes these several but very distinct conditions. Now any pimple that has been scratched, and which is covered at its apex with a dark scale formed by dried blood, is said to be 'pruriginous.' Pimples that become pruriginous are not of one kind only, but (and this is certainly lost sight of, it seems to me) of different kinds: for instance, erected and congested follicles, papules formed by deposit of lymph (lichen), papules formed out of wheals, &c.—any pimple, in fact, when scratched, may become pruriginous; hence we have pruriginous eczema and the like, the erected and congested follicles resulting from the inflammation and lasting congestion being altered by scratching so as to resemble those of prurigo. In true prurigo the characteristic feature is the development of solid papules, due to the deposit of lymph in the skin, and accompanied by severe irritation of varying kind. These

papules are primary; they are not caused by pediculi, but they are altered by scratching so as to present the aspect of 'pruriginous' papules; and, as a part consequence of scratching, other 'pruriginous' papules, originating in erected and congested follicles, are present. In the case of 'phtheiriasis' due to pediculi, the primary pathognomonic lesion is a minute hæmorrhage, not a papule. There seems to be great ignorance as to the anatomy of the pediculus. It is thought to possess jaws, and to bite freely; and certain of the wounds seen on the skin are regarded as having been produced by the bites of the pediculus. This is all a mistake. Prof. Schjodte has clearly shown that the pediculus is furnished with a peculiar sucking apparatus. The mouth is furnished with a labium, capable of being retracted into the upper part of the head. This lip is first inserted into a sweat-pore, and is then protruded. A row of hooks then hold to the parts around, and two pairs of setæ are next protruded and applied together so as to form a tube. When the pediculus is sucking, soon a red speck is seen at the top of the head, which exhibits dilatation and contraction; and this red coloration is traced presently into and along the œsophagus and the intestines, which latter are seen to be in lively peristaltic action. The effect of the attack of the pediculus is to cause a little escape of blood into the follicle; and it appears as a minute and, at first, bright red speck, the size of a couple of pin points—not *raised*, not itchy, and not removable by pressure. Occasionally some swelling takes place; but this quickly subsides. This lesion differs altogether from a scratched follicle; and I regard it as quite characteristic of the attack of the pediculus. I have often shown to you the hæmorrhagic speck induced by the louse, and you will see it very plainly in the patients now before you. But there are accidental features in phtheiriasis; and these result entirely from the scratching to relieve the irritation set up—scratched congested follicles and papules, urticaria, ecchymatous pustules, &c. The same are seen in scabies, superadded, as the result of scratching, to the essential features of the disease—viz., the acarus in its cuniculus.

"If it be asked, then, what does the pediculus do, I reply, prefer uncleanly and ill-nourished surfaces; injure the skin by projecting its haustellum into the follicles, and drawing away blood, leaving behind a minute hæmorrhage, and then sets up irritation, and gives rise, through the scratching practised to relieve the latter, to urticaria, eczema, ecchyma, congested and erected follicles. These latter are the common results of scratching under varied circumstances. Always recollect this fact. The production of minute traumatic hæmorrhagic specks, not the result of any alteration in pre-existing papules or excoriations, and not dependent upon scratching, is the essential and peculiar effect of the attack of pediculi; the pathognomonic sign of phtheiriasis. Hebra and I agree that true prurigo is quite distinct from phtheiriasis, and has nought to do with pediculi. We have had ample evidence of this during the last three months. And now let us go to the cases present to illustrate these several points."

ART. 86.—*On Ichthyosis.*

By GEORGE NAYLOR, F.R.C.S.

(British Medical Journal, June 25.)

Mr. George Naylor says that local means are of great service in the treatment of ichthyosis. Glycerine, in the proportion of six or eight ounces to thirty gallons of water, at a temperature of 96°, is a useful bath, and twice or thrice a week, or, as this is costly, after using a common warm bath, the whole surface may be spread with a quart of warm water containing two ounces of glycerine; or lastly, glycerine alone after a bath. When scales are very thick, rub them off with pumice stone. Internally, iron combined with aperients.

ART. 87.—*The Case of a Man who had a Vesicular Eruption on the Abdomen, which Discharged at times great Quantities of a Chylous Fluid.**

By WILLIAM ROBERTS, M.D., Manchester.

(British Medical Journal, September 24.)

The patient was a clogger, aged forty-five. Two and a half years previously he suffered for six months from a succession of abscesses in various parts of the body. One of these was situated in the hypogastric region, and about the site of this—after it had healed—there arose an eruption of vesicles which gradually extended over nearly the whole of the lower half of the skin of the abdomen. These vesicles at first contained a serous fluid, but afterwards this assumed a perfectly milky appearance. Some of the vesicles were as large as peas; others as small as pins' heads. Sometimes the eruption was quite dry for days and weeks; but some half a dozen of the largest vesicles often discharged immense quantities of milky fluid. This fluid coagulated spontaneously; it contained albumen and finely divided fat; also cells resembling the pale blood-corpuscles. This eruption remained—sometimes dry and sometimes discharging—without much change for a period of two years. No local appliance or internal remedy availed anything. The patient finally became tuberculous and died. The skin of the abdomen was removed after death, and it was found that the disease was situated in the cutis vera and the subjacent connective tissue; the altered part appeared to consist of a net-work of short channels or lacunæ, lined with spheroidal gland-cells. These communicated with each other and with their vesicular expansions on the surface. This man passed chylous urine on two occasions; but no anatomical change could be discovered in the urinary passages. The lymphatic glands in the groin and the lymphatic vessels were unaffected, and the lacteal system had no connection whatever with

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-on-Tyne, August, 1870

the eruption. Reference was made to the cases of Dr. Buchanan and Dr. Carter, and the bearing of the case on the pathology of chylous urine pointed out.

ART. 88.—*On the Vegetable Parasites of the Skin.*

By ALEX. DAVIDSON, M.A., M.B., & C.M.

(*Liverpool Medical and Surgical Reports*, October.)

At a meeting of the Microscopical Section of the Liverpool Medical Institution, Dr. Davidson read a paper on "The Vegetable Parasites of the Skin."

The paper contained a description of the common forms of skin-disease which are associated with a vegetable parasite :

1. Favus, or Tinea favosa, and its fungus Achorion Schoenleinii.
2. Ringworm, or Tinea tonsurans, and its fungus Tricophyton.

Ringworm of the Body, and Ringworm of the Beard, were shown to be due to the same fungus as Ringworm of the Head, the differences in appearances being merely due to the different localities.

The question of the parasitic nature of Sycosis was discussed at some length, and the proofs adduced by Dr. McCall Anderson, of the existence of the parasite in this disease, were accepted as sufficient.

3. Tinea versicolor, and its fungus Microsporon furfur.

4. Tinea decalvans (Alopecia areata) was passed by, as its parasitic nature is still a matter of doubt.

The theories that were held as to the relation of the fungus to the skin disease were then discussed; these are four :

1. That the appearances described are not vegetable at all, but merely degenerations of the natural structure of the skin.
2. That the fungi are not the cause of the skin disease, but merely secondary to disease already existing.
3. That there is only one fungus; the same in all forms of skin disease.
4. That there are several kinds of fungus, each giving rise to its own disease.

The first and second theories were shown to be disproved by the mode of origin and spread of the diseases, and by the appearances shown under the microscope, as well as by many other considerations.

The arguments for the third and fourth theories were fully examined, and the balance was shown to be in favour of the last—namely, that each of these forms of parasitic skin disease is due to a distinct fungus. Still the question of the unity or multiplicity of the parasite was acknowledged to be not certainly determined.

The paper was illustrated by drawings, and by a large number of microscopic preparations.

ART. 89.—*Treatment of Syphilis.*

By J. McCALL ANDERSON, M.D., Professor of the Practice of Medicine in Anderson's University, Physician to the Royal Infirmary and to the Dispensary for Skin Diseases, Glasgow.

(*The Lancet*, June 18.)

It is Dr. McCall Anderson's firm conviction that while mercury is of little use in the treatment of non-specific affections of the skin, except in so far as it is of value as a purgative or corrector of digestive derangement, it is invaluable, in appropriate cases, in syphilitic affections; and, further, that no one who has not had ample opportunities of testing its efficacy in syphilitic affections of the skin, where we have the eye to guide us, is qualified to form a correct opinion as to its value in syphilis.

We are justified, Dr. Anderson says, in bringing the patient under the influence of mercury under the three following conditions, although it is not always necessary to touch the gums, and certainly in no case should salivation be courted.

1st. When we have to treat one of the earlier of the cutaneous manifestations of syphilis in a person of sound constitution.

2nd. When the syphilitic poison has not only attacked the skin, but also some delicate organ, such as the eye.

3rd. When, in a person of sound constitution, we have to deal with a circumscribed syphilitic eruption of old standing, which resists external applications and iodide of potassium in full doses.

Instead of administering mercury by the mouth, the process of subcutaneous injection, as recommended by Lewin and others, may be tried—a mode of administration from which Dr. Anderson has obtained excellent results. Four grains of the perchloride of mercury should be dissolved in an ounce of distilled water, and of this from seven and a half minims at the least (*i. e.*, a sixteenth of a grain) to fifteen at the most (*i. e.*, an eighth of a grain) should be injected once daily. It is indifferent where the injection is made, except that the least sensitive parts and the parts least liable to pressure should be selected. It possesses the following advantages:—1. The dose can be regulated with the utmost precision. 2. The medicine has no tendency to derange the digestive organs. 3. It acts with greater rapidity than when the perchloride is administered by the mouth. (Three or four weeks usually suffice for the cure.) 4. A much smaller quantity is sufficient to produce the desired effect (about three grains on an average). 5. It does not usually produce salivation, although stomatitis is a frequent result. The process has, however, the following disadvantages:—1. The operation is somewhat painful, and much pain is experienced for several hours after each injection; so that patients sometimes object to its continuance. 2. In exceptional cases—once in about two hundred injections (Lewin)—the operation is followed by circumscribed inflammation and abscess.

Another mode of employing mercury is in the form of the *mercurial vapour bath*, which is specially valuable in the treatment of syphilitic

ulcerations of the skin, and also of syphilitic eruptions occurring in cachectic subjects; but Dr. Anderson is not prepared to coincide with those who laud it as the most effectual, although it is undoubtedly the safest, method of bringing the system under the influence of mercury in every case. The preparations which are most frequently employed for this purpose are the subchloride and the bisulphuret; of which half a drachm of the former, and from a drachm to two drachms of the latter, may be used for each bath. The mode of carrying out this treatment, and its special advantages, have been fully discussed by Mr. Langston Parker and Mr. Henry Lee.

In syphilitic eruptions occurring in infants, the subjects of hereditary taint, mercurial treatment is certainly curative, provided it is commenced before the poison has had time to produce profound syphilitic cachexia. Indeed, there is no other treatment which appears to have any material influence over the disease; so that, in Dr. Anderson's opinion, to withhold mercury in such cases is altogether unjustifiable.

As a rule, the most simple and most satisfactory way of treating infants is to rub into the eruption, night and morning, an ointment containing mercury, or to make use of the mercurial belt. A piece of mercurial ointment the size of a bean should be rubbed daily upon the inside of a piece of flannel two and a half inches broad, and sufficiently long to surround the body of the child about the level of the umbilicus, and this should be worn until two or three weeks after the complete disappearance of the symptoms. Should the ointment, however, irritate the skin, and tend to produce an erythematous or eczematous rash (the so-called *eczema mercuriale*), the belt may require to be removed for a time, during which the ointment may be rubbed into some other part of the body.

SECT. III.—FORENSIC MEDICINE.

ART. 90.—*Poisoning by Strychnia Successfully Treated by Bromide of Potassium.*

By CHARLES B. GILLESPIE, M.D., of Freeport, Pa.

(*American Journal of the Medical Sciences*, October.)

Dr. Gillespie states that he was called to a man who had taken three grains of strychnia. The patient's pulse was 70, hard and contracted; respiration good. The whole surface of the body was quite cold; great anxiety in the expression of the face; sight and hearing perfectly normal. On giving him drinks, the great difficulty was in getting the cup to his mouth without throwing him into convulsions; but when once there, he would gulp the contents down spasmodically in great mouthfuls. He had but little control over his arms; as soon as he let go his grasp on the bedstead they would jerk violently, and continue thus until he laid hold of something solid and immovable.

The spasms were evidently becoming more violent and frequent, and beginning to implicate the muscles of respiration. Not having the remedy desired with him, Dr. Gillespie gave him a teaspoonful of the

fluid extract of hyoscyamus, and then hurrying home weighed out one ounce of bromide of potassium, which he dissolved in three ounces of water. Of this solution Dr. Gillespie ordered one half-ounce every thirty minutes, and entrusted the administration of the remedy to a carefully instructed attendant, and did not revisit the patient till next morning, when he found the patient out of danger. The paroxysms had gradually become less violent and frequent, and by the time that the last dose of bromide was taken at midnight, he was able to get up without assistance and walk to his own room. The only bad effects remaining were excessive muscular and nervous prostration, with an occasional slight convulsive shudder, which, however, entirely passed off through the day, and in thirty-six hours' time he was up and at his usual business.

Dr. Gillespie is confident that but for the prompt administration of large doses of the bromide the patient would not have survived. How much the large dose of hyoscyamus had to do with the result he is not prepared to say; it produced a free and painless catharsis, and may have aided in relaxing the spasms. But to the well-known effect of the salt over the anterior or motor portion of the spinal cord, the good result in this case is especially to be attributed. The physiological effects of the strychnia and bromide of potassium are, Dr. Gillespie is sure, directly antagonistic.

ART. 91.—*Chloral as an Antidote to Strychnia.*

By J. H. BENNETT, M.D.

(*British Medical Journal*, August 6.)

Dr. Bennett and his assistant in the physiological laboratory, Dr. McKendrick, showed an interesting experiment illustrating the power of chloral in neutralizing the poisonous effects of strychnia. After briefly detailing the few observations already published on this subject by Groves, Richardson, Verneuil, and Liebreich, Dr. Bennett stated that, so long ago as May 19th, Dr. McKendrick and he had shown that chloral had the power of neutralizing the effect of an otherwise poisonous dose of strychnia; and that since that date the experiment had been frequently repeated by them on rats, rabbits, &c. Richardson had tried it, but unsuccessfully; while Liebreich had tried the opposite experiment, and found that strychnia was an antidote to chloral. Two rabbits were then taken, each weighing about three pounds and a half, and equal in strength. One hundredth of a grain of strychnia, which had been proved to be a poisonous dose to the rabbit, was then injected under the skin of both rabbits; but to the second rabbit was also given an injection under the skin of fifteen grains of chloral in solution. In ten minutes the first rabbit began to have convulsive twitchings of the legs; in thirteen minutes it became frisky and ran about the table; in sixteen it took two or three severe tetanic spasms; in eighteen it died. The second rabbit was lethargic in ten minutes—sound asleep in a few more. In sixty minutes it woke up with a spasm or two; and by the end of the meeting—135 minutes—it seemed sleepy, but otherwise quite well.

ART. 92.—*Blood-Pictures.*

By JOHN DAY, M D.

(British Medical Journal, August 6.)

Dr. Day, of Geelong, Australia, the improver of the guaiacum tests for blood and other animal fluids, confirms the discovery of Neumann, that the picture or network formed by the human blood can be distinguished under the microscope from that which is formed by the blood of other animals. He says he has repeated the experiment, which is "wonderfully simple," almost every day for the last two months, with invariable success. A small drop, not a mere speck, of the blood is to be placed on a microscope slide, and carefully watched, at a temperature of 10° or 12° Réaumur (=64.2° to 59° Fahr.), until the picture or network formed by its coagulation is developed. Human blood speedily breaks up into a "small pattern" network: the blood of other animals (calves, pigs, &c.) takes a longer time, and makes a larger pattern; but the blood of every animal seems to form a characteristic "picture." Dr. Day has examined the blood of calves, pigs, sheep, rabbits, ducks, hens, several kinds of fishes, &c., as well as that of man, and has found the results to be trustworthy and constant.

ART. 93.—*Case of Suicidal Hanging.*

By Dr. PACKARD.

(American Journal of the Medical Sciences, July.)

At a meeting of the Pathological Society of Philadelphia, Dr. Packard gave the following account of a post-mortem examination, at which he had been present by invitation of the coroner:—

Mr. —, aged thirty-seven, a very strongly built and muscular man, on the 8th of November, 1869, hung himself to a banister in his own house, with a piece of picture cord. The cord was composed of a strong twine, wrapped with soft cotton to give it bulk; it was so short that he could scarcely have had more than six inches fall. He cannot have been hanging more than a very few minutes when he was discovered, and a neighbour summoned, who cut the cord. Death had already occurred.

Autopsy, forty-eight hours after death, the body having been in ice.—Rigor mortis very strongly pronounced; the upper surface was very pale, but hypostatic congestion of florid hue was present, except where the body had pressed on the bottom of the box; at all such points the paleness was intense. The face was pale, and not at all swollen; its expression was placid. The parchment-like line of the cord, with a slightly-swollen red ridge on either side of it, ran all round the neck, on a level with the thyro-hyoid membrane, which was very strongly crowded backward, so as to make the upper edge of the thyroid cartilage seem to project.

Scalp normal; veins of dura mater congested, but not intensely so;

a curious thin clot staining the bone on either side within the skullcap, corresponding accurately to the attachment of the temporal fascia. It formed an arched line perhaps three-eighths of an inch in width; and a corresponding mark existed on the surface of the dura mater. Brain-substance congested. On the upper surface of the convolutions at either side of the longitudinal fissure, were some slight arborescent ecchymoses, and a very small clot effused. A small quantity of bloody serum in each of the lateral ventricles, and the choroid plexus somewhat congested. Larynx very large and finely developed; the only perceptible lesion about it was the stretching of the thyro-hyoid membrane by the pressure of the cord. There was no tearing of the muscles of the neck, nor could we discover any displacement or fracture of any portion of the cervical vertebræ. Lungs healthy, but deeply congested, especially at their posterior parts. Heart well developed, strongly contracted, and empty; on its surface a somewhat unusual amount of fat; valves all healthy. Blood dark-coloured and perfectly fluid. Abdominal viscera healthy; liver full of blood, although its surface was somewhat paler than normal.

This examination was made in consequence of a suspicion entertained by some of the family that the death was really caused by poison, and that the hanging was done subsequently as a blind. But of this, it is clear, there was no evidence. All the post-mortem appearances were those of suffocation by the pressure of the cord on the thyro-hyoid membrane. In judicial hanging, where there is a fall, other lesions are generally present, owing to the violent stress put upon the vertebræ, muscles, and ligaments, and the length of time during which the suspension is continued. As an instance of pure suffocation by hanging, therefore, this case is not without interest.

SECT. IV.—THERAPEUTICS.

ART. 94.—*On Vaccination.*

(*Gazette Hebdomadaire*, No. 27, 1870.)

The Academy of Medicine of France has published the following declaration:—

Vaccine is a preservative against variola, although after a certain time revaccination is indispensable for assuring complete immunity against contagion.

Revaccination is absolutely exempt from danger. The Academy formally repudiates all that has been stated to the contrary.

Revaccination may be useful at any age.

It may be practised without inconvenience during the course of an epidemic. Moreover it is known that in small places, in families, in schools, and in certain collections of individuals, revaccination has sufficed to avert a commencing epidemic.

The epidemic of small-pox now raging at Paris and at other parts of the territory has supplied the most convincing proofs of the preservative power of revaccination.

In various army corps, and especially in the Garde de Paris, in various establishments, both public and private, and also in some of the municipal schools, variola has been extinguished under the influence of re-vaccinations.

Finally, recent statistics, chiefly those collected in the civil hospitals of Paris, prove in a most formal manner that persons who had been recently re-vaccinated were attacked in very small numbers, and then but very slightly and without figuring in the bills of mortality.

If it is of the greatest importance then, both in public and individual interest, to extend by all possible means the practice of re-vaccination.

ART. 95.—*The Value and Safety of Arm-to-arm Vaccination as a Protection against Small-pox.**

By A. B. STEELE, M.D.

(*Liverpool Medical and Surgical Reports*, October.)

The author pointed out that the great bulk of arm-to-arm vaccinations, since the first discovery of the process, have been performed with lymph transmitted from the early vaccinations of Jenner himself, and therefore whatever benefits have been derived from vaccination are due to humanized and not to the so-called "animal lymph." The value of vaccination is proved by the national statistics, which show that the death-rate from small-pox for thirty years prior to vaccination was 3000 per million of population per annum; the present death-rate from the same causes amounts only to 200 per million. Previous to the extension of the Vaccination Act to Scotland, the average yearly deaths from small-pox were 1054, and in Ireland from 2000 to 5000. Since vaccination has been systematically carried out, the small-pox mortality in both countries has progressively decreased, and last year was entirely abolished, not a single death from small-pox having occurred. The nurses of the Small-pox Hospital are vaccinated with humanized lymph; and during a period of thirty years not one instance occurred of contagion from the patients in the hospital. In addition to the foregoing illustrations of the protective influence of humanized lymph, its undiminished efficacy is shown by its undiminished infective power. In the Blackfriars station of the National Vaccine Establishment, in 1864 there was but one failure in 1000 operations. At the Birmingham station, out of considerably more than 1000 there were but three failures; and in 1865, 1068 cases without a single failure. Mr. Shepherd, of Bristol, had 2000 without a failure. In five stations of the National Establishment in London, Liverpool, and Birmingham, 446 punctures were made, and the result was productive of 443 typical and perfect vesicles. At the Liverpool station of the National Vaccine Establishment the lymph in use was originally obtained from Jenner, and has been carefully transmitted to the present day; an accurate and continuous record being in

* Abstract of a Paper read at a Meeting of the Liverpool Medical Institution, Session 1869-70.

existence of the result of every case of vaccination performed at the station. Its effects can now be witnessed at the station. The foregoing proofs of the undiminished efficacy of human lymph, both as to its protective influence and its infective power, are at the same time demonstrative of the fallacy of the view that lymph degenerates by successive transmissions through the human subject. Jenner, while admitting the liability to degeneration from want of due care in the selection of subjects, spoke of the alleged degeneration by mere lapse of time as a "conjecture he could destroy by facts," and this opinion was expressed by him after thirty years' careful watching of the effects of lymph which had undergone several hundred transmissions. See Barron's *Life of Jenner*, vol. ii. p. 398.

Jenner's views have been confirmed by numerous trustworthy observers from his own day to the present time. Marson, Ceely, Tomkins, and others give similar testimony in favour of the unimpaired efficacy of the lymph now in use. Dr. Blanc's statement made at Leeds (see *Brit. Med. Journ.*, Sept. 4th, 1869), that Marson and Ceely "had changed their minds" on the question, and that Marson was using his (Dr. Blanc's) lymph instead of the old Jennerian lymph, and that Mr. Ceely had pronounced heifer lymph to be superior to humanized lymph, are simply untrue, as the author had ascertained from subsequent inquiry. Equally without foundation is the argument of Dr. Blanc, that whereas one vesicle was sufficient to afford protection in Jenner's time, not less than four vesicles are found necessary now. The truth is, that there is no evidence whatever that one vesicle in Jenner's day afforded a greater degree of protection than one vesicle does in the present day. Jenner probably did not limit himself to one puncture, and the early vaccinators we know used four or six punctures. The National Vaccine Establishment for the last fifty years have strongly insisted upon not less than four punctures. The fact that four cicatrices imply a greater degree of protection than any less number was not ascertained, and probably not generally suspected until the inquiries of Marson some fourteen years ago, which will be alluded to hereafter.

Dr. Blanc's assertion that Jenner held the opinion that original cow-pock was an absolute protection against small-pox, and his inference—viz., that as vaccination is not an absolute protection therefore its protective influence has decreased—is one other example of the want of correct information on the part of Dr. Blanc. So far from maintaining that cow-pox was an absolute protection, Jenner knew as well as we know that there is no such thing as absolute protection, as the existence of recurrent small-pox sufficiently shows. Jenner's opinion was thus expressed: "Duly and efficiently performed, it will protect the constitution from subsequent attacks of small-pox as much as that disease itself will. I never expected it would do more, and it will not I believe do less." Dr. Blanc's statement that post-vaccinal small-pox had progressively increased until, in 1864, it reached the very high average of 84 per cent., is so patently absurd as to be unworthy of refutation.

This and other fallacies of the same writer have been fully exposed and answered in the *Practitioner*, October, 1869. Dr. Braidwood maintains that humanized lymph does not produce the true Jennerian vesicle, and therefore does not confer protection; and he claims for

himself and Dr. Blanc the credit of introducing into this country a new mode of vaccinating and a new source of vaccine lymph; but all who are acquainted with the history and literature of vaccination will remember that many years ago McPherson, Estlin, Ceely, and others had experimented largely with animal lymph. Ceely especially has continued his investigations more or less continuously to the present time, and has carefully tested and recorded the results of lymph, both animal and humanized, in every different method. When Dr. Braidwood asserts that he has observed the effects of humanized lymph at the station of the National Establishment in Scotland, and that he has seldom seen a perfect Jennerian vesicle produced by it, the only possible explanation to be given is, that his notion of what constitutes a true Jennerian vesicle differs from that of other vaccinators. The alleged indifference of the Government to improvement on new discoveries in vaccination is quite a misapprehension on the part of Dr. Braidwood. The Medical Department of the Privy Council have for the last nine years been progressively completing a scheme of national vaccination, which is rapidly approaching as perfect and efficient an organized system as perhaps can be obtained in this country. The question of animal lymph has not escaped them, for from their last annual report we learn that about twelve months previous to the publication of the views of Drs. Blanc and Braidwood, they had already set on foot an inquiry into the system adopted on the Continent, and the subject is still under their consideration. "Further information, however, is requisite before any final opinion can be formed on the question of making more or less use of the system, for the purpose of our national establishment."

The increased frequency of post-vaccinal small-pox is no proof of the degeneration of lymph, but is the natural result of the very imperfect way in which public vaccination in past years has been performed. The inquiries of Mr. Marson and of the Medical Department of the Privy Council have established, almost conclusively, that the degree of protection afforded is in direct proportion to the quality of the vaccination. Nothing less than four well-marked typical cicatrices are sufficient to indicate a full measure of protection.

The alleged increased frequency of successful re-vaccination is no proof of the degeneration of lymph. First, because it can be accounted for by the ascertained imperfection of the primary vaccination throughout the country; and secondly, because the large experience which has now accumulated leads to the practical conclusion that the local results of re-vaccination were no tests whatever of the previous constitutional condition as to liability to the small-pox. The safety of humanized lymph is proved by the fact that, in the experience of those who on the one hand are constantly concerned in observing the diseases of children and skin diseases, and on the other those who treat syphilis as a speciality, no instance has occurred of the transmission by vaccination of other diseases than vaccinia. Secondly, numerous direct experiments have shown that if the virus of cow-pox and syphilis were mixed, syphilis alone is communicated; and further, vaccine lymph, purposely derived from syphilitic subjects, transmits to others cow-pox only. Thirdly, no well authenticated case of the transmission of syphilis has hitherto been brought to light, at all events in this country. The alleged frequency

of vaccino-syphilis on the Continent leads to the inference suggested by Mr. Ceely, "that our Continental brethren are very careless vaccinators, and that syphilis must be very much more prevalent among their infantile population than with us." The celebrated Rivalta cases, together with all the instances of supposed vaccino-syphilis, have been fully discussed by Dr. Seaton in his *Handbook of Vaccination*, and his conclusion is that "none of the alleged cases have established that syphilis has ever been imparted in the true and proper performance of vaccination." The only ground upon which the use of animal lymph can be recommended, is with the view of meeting the prejudices of that portion of the public who still believe in the possibility of vaccino-syphilis; but it must not be forgotten that in the early days of vaccination, prejudices quite as strong were used against the inoculation of what were called the "bestial humours," and dire results were attributed to the lymph direct from the cow.

ART. 96.—*On Animal Vaccination ; a new source of Vaccine Lymph.**

By P. M. BRAIDWOOD, M.D.

(*Liverpool Medical and Surgical Reports*, October.)

Describing a recent visit to London, Paris, Berlin, St. Petersburg, and Brussels, in search of information regarding animal vaccination, the author gave an account of the manner in which this procedure was carried on in these cities. He found Dr. Blanc most careful in the performance of the operation, and very successful. Dr. Blanc's views entirely concur with those of the Continental animal vaccinators, and the advantages possessed by heifer lymph, as they are stated in his pamphlet recently published, and entitled *Compulsory Vaccination ; an Inquiry into the present unsatisfactory condition of Vaccine Lymph, and a Remedy proposed*, have been also testified to by Continental writers on the subject.

Dr. Braidwood next gave a detailed account of the experiments made in Paris, during 1866, on behalf of the Academy of Sciences, and quoted from Dr. Depaul's report regarding that inquiry. The lymph derived from spontaneous cow-pox, and used in these experiments, was obtained by inoculating a heifer at Dr. Negri's establishment and conveying the animal to Paris; while a second supply was obtained from a case of spontaneous cow-pox which occurred at Beaugency. The experiments made by this Commission, with the view of inoculating syphilis into the bovine species, proved unsuccessful. While testing the comparative merits of vaccination from the heifer, and of arm-to-arm vaccination, 38 experiments were instituted. Children to the number of 681 were vaccinated with heifer lymph, and 897 with humanized lymph. Taking into account the unfavourable conditions under which some of the experiments with cow-pox were made, the Commission concluded from

* Abstract of a Paper read at a Meeting of the Liverpool Medical Institution, Session 1869-70.

these observations, "that as regards the number of vesicles, if cow-pox matter is used of the proper age, and under the well-known fixed conditions, we are sure not to have more failures, and to obtain vesicles equal in number to those of arm-to-arm vaccination." This being, as the author stated, the only official investigation of the subject of animal vaccination which has yet been instituted, it was very fully detailed. With the sanction of the French Government, an institution for the prosecution of this method has now been established in Paris. Animal vaccination has not yet been sanctioned by the Prussian Government, but Dr. Pissin pursues this method in Berlin.

In the Foundling Hospital of St. Petersburg, there was instituted in 1867 the practice of vaccinating children directly from the heifer. The cow-pox lymph was at first sent to St. Petersburg from Dr. Pissin's establishment in Berlin. In 1865 vaccination with retro-vaccine lymph was inaugurated in St. Petersburg, and proved successful to a certain extent, but was abandoned in favour of animal vaccination. At this Russian institute, 100 to 200 children are vaccinated every morning through the year directly from the heifer. Four heifers are always kept in use at the establishment, and twenty heifers are used there monthly for vaccination purposes. The lymph succeeds best when removed on the fifth day after inoculation of the heifer.

In conversing with Dr. Warlomont, of Brussels, on this subject, the author found his views to coincide entirely with those of the other authorities referred to. The testimony then of these witnesses, from six different nations, may be briefly stated thus:—The transmission of cow-pox from heifer to heifer is accomplished without difficulty. Animals thus used receive no accident which can be legitimately referred to the operation. The successive transplantation of the same cow-pox has not appeared to influence the character of the vesicles. The progress of the eruption on heifers is more rapid than that of the human vaccinal vesicle, and is affected by the health of the heifer. Vaccinating by incision has no advantage over vaccination by puncture or scratching. At a moderate expense, an establishment for animal vaccination could be organized and maintained in large towns. The number of punctures which can be made is illimitable, and the quantity of lymph which each heifer might furnish is considerable, and in each instance is more than sufficient to meet the exigencies of the most extensive practice. Heifer lymph, like ordinary lymph, often fails after being kept a certain time in tubes or on squares. In this respect, humanized lymph has a certain advantage over heifer lymph.

The advantages then of animal lymph are:—that from this source vaccine lymph free from all morbid or diathetic principles is obtained; that spontaneous cow-pox, by being transmitted only through the bovine race, retains all its essential qualities; and hence that vaccination from the heifer produces the true Jennerian vesicle. In conclusion, Dr. Braidwood expressed his strong conviction of the superiority of heifer lymph over ordinary lymph, and expressed a belief in the degenerated character of the vaccine lymph in ordinary use. The latter opinion was based on the fact that re-vaccination is, in the present day, almost always successful. Moreover, accidents, some say diseases, follow vaccination as commonly practised, whereas no accident has yet been known to

occur after the employment of heifer lymph. Further, if, as is generally admitted, vaccination has been in multitudes of instances carelessly performed, such lymph is not consequently purified by passing through *one* human constitution, but remains for ever more or less defective in its true prophylactic nature. No means have been found to restore these potent qualities to ordinary lymph, or to remove the noxious principles in it, although many attempts with this object have been made.

ART. 97.—*Some New Remedies—Nitrite of Amyl, the Ethylates of Sodium and Potassium, and the Triethylic and Trimethylic Ethers.*

By BENJAMIN W. RICHARDSON, M.D., F.R.S.

(*Medical Times and Gazette*, October 22.)

Nitrite of Amyl.—The physiological action of nitrite of amyl is directly exerted on the ganglionic nervous tract; it paralyses so that the nervous supply over the extreme vascular system is impaired; and the muscular system generally, if the effect be sustained, is thrown into relaxation. The observation of this effect of the nitrite led Dr. Richardson to suggest it primarily as a remedy for excessive spasmodic action—for tetanus specially—and it has been applied in the direction thus pointed out with much success. Lately, Mr. Foster, of Huntingdon, has administered the nitrite with complete success in a case of traumatic tetanus—holding the convulsions in check for the long period of nine days. The nitrite is best administered by inhalation, five minims on a piece of folded linen or handkerchief being the dose for an adult. The remedy will act if it be given by the mouth; but as the action is very energetic, and requires to be kept under the control of the administrator, it is much safer to administer by inhalation. In tetanus, the periods of recurrence of the spasmodic attacks should be carefully watched, and when the paroxysm is threatened, the inhalation of the nitrite should commence so as to subdue the spasmodic seizure. In spasmodic angina, in asthma, and in colic, the agent has been administered also with success.

It must be clearly understood that the action of the nitrite is curative only in so far as it controls the spasm in the cases named—that is to say, it prevents death, and so leaves time for recovery. The author observed originally, and on the observation the suggestion of the practice is founded, that frogs under strychnine tetanus are immediately relieved of spasm by the nitrite of amyl, and that with great care in keeping the animals free of spasm, they can be sustained until the strychnine is removed from the body, when there is recovery; and in this explanation Dr. Richardson defines the true place of the nitrite as a remedy. In tetanus the administration of the nitrite is not to be considered as displacing other rational means of cure. On the contrary, it favours other means: it enables food to be freely supplied, it gives time for the action of purgatives and diuretics, or for the employment of the hot-air bath.

Caustic Ethylates.—The ethylates are crystalline substances, in which one atom of hydrogen of absolute alcohol is substituted by one of potassium or of sodium. Brought into contact with the body, the ethylates at first produce no action, but as they pick up water from the tissues they are decomposed, the potassium or sodium is oxidized, yielding caustic potassa or soda in the fresh state, and alcohol is re-formed from the recombination of hydrogen derived from the water. Dr. Richardson proposes the employment of these ethylates as caustics. He believes they will be found to be the most effective and manageable of all caustics; and that in cases of cancer, when it is desirable to destroy structure without resorting to the knife, and in cases of nævus and other simple growths, they will be of essential service. The ethylates can be held in solution with alcohol in various degrees of strength; the solution can be applied with a glass brush or injected by the needle, and a slow or quick effect can be insured, according to the wish of the operator. The ethylate of potassium is the most active agent.

Triethylic Ether.—When the ethylate of sodium is acted upon by chloroform, there is produced an ether, called triethylic, of which there is here a specimen. The chemical action which takes place is very fierce, and great care is required to secure a fair product. In the decomposition the chlorine of the chloroform combines with the sodium of the ethylate to form chloride of sodium, which salt falls down, and triethylic ether remains. As chloroform contains three atoms of chlorine, each single part of chloroform decomposes three parts of ethylate of sodium. Thus:— $3(\text{C}_2\text{H}_5\text{NaO})$, ethylate of sodium; CHCl_3 , chloroform = 3NaCl , chloride of sodium, and $\text{C}_7\text{H}_{16}\text{O}_3$, triethylic ether.

The ether is a heavy, aromatic, ethereal fluid, having a vapour density of 74, a specific gravity of .896, and a boiling point of 145°C ., 297°F . It acts much like alcohol physiologically. Dr. Richardson has lately used it as a menstruum of ethylic ether for general anæsthesia. The ethylic ether carries over with it, in evaporation, sufficient of the heavier ether to form a compound vapour which is very pleasant to breathe and equable in action. Dr. Richardson has administered this compound twice for operations on the eye—once while Mr. Brudenell Carter operated for strabismus, and once while Mr. Walker, of Liverpool, operated for cataract. The anæsthesia in both cases was perfect. The ether also forms an excellent mixture with bichloride of methylene; and were mixtures of anæsthetic substances satisfactory scientific applications, we might bring it into extensive use. Dr. Richardson accepts it, however, rather as an index of the way he should go than of a resting-place. He looks for a simple ether which shall have the full and safe qualities of the mixture, together with perfect stability. We have before us, in truth, already another ether, called trimethylic, made by acting on methylate of sodium, CH_3NaO , with chloroform; the product being $3(\text{NaCl})$, common salt, and $\text{C}_4\text{H}_{10}\text{O}_3$, trimethylic ether. But this ether, which has a vapour density of 53, and a high boiling point, is not quite, though it approaches, the substance we require.

ART. 98.—*On Instruments: Ancient and Modern.**

By JAMES BARNES, M.R.C.S.

(Liverpool Medical and Surgical Reports, October.)

Commencing with a brief sketch of the surgical instruments used by mankind from a savage to a civilized condition, and the progress of surgery from that of a rude art to a cultivated science, the author proceeded to trace its history from the earliest known records to the present date. Examples were given of the state of surgery as existing among the Greeks, Romans, Egyptians, Arabians, Italians, and French, and the perfection in the invention and use of surgical instruments attained by those nations; while the condition of the art in our own country was traced from the early Saxon times, when Cynifrid operated in the year 679, to the times of Harvey, Wiseman, and Young. Of the antiquity of surgical instruments, evidence irrespective of that found in the works of the ancient authors, was said to exist in the monuments of Babylon and the basso-relievos of Thebes, where were depicted the performance of various surgical operations and the form of instruments somewhat resembling many of those in use. Of the specimens of ancient instruments in actual existence, and mostly obtained from the ruins of Herculaneum and Pompeii, mention was made of the probe, speculum matricis, speculum oris, amputating knives, lancets, midwifery hooks and forceps, spatulas, taps for ascites, vulsella, trephines, elevators, and others the use of which was problematical.

Passing from the general to the special consideration of the subject, the author divided instruments into two classes: instruments of *Diagnosis*, and instruments of *Treatment*. The first class were called on to assist the sight, the hearing, and the tactile powers of the hands. They were defined as agents by means of which the human faculties were enabled to act with intensified power, and in positions where, without their aid, they could not be brought into operation; to be, in fact, philosophically considered, extensors of the hands and senses; while, with the ancients, only two of the senses were supplemented by instruments, and that very imperfectly—viz., those of sight by the speculum, and touch by the probe. In modern times the sense of hearing has been brought into play, and through the agency of the stethoscope was developed a new world of medical inquiry. Among the more recently invented aids to sight, of which specimens were exhibited, were mentioned the microscope, the microspectroscope, the ophthalmoscope, the spirometer, the sphygmograph—as invented by Marey and improved by Mayer and Metzler—the laryngoscope, the endoscope, the amoscope, the minometer, the medical thermometer, and many others. Instruments of treatment were classified according to their mechanical action, into those of puncture, division, extraction, application, compression, and dilatation. The knife, which was used

* Abstract of a Paper read at a Meeting of the Liverpool Medical Institution, Session 1869-70.

as a surgical instrument some 3500 years ago, when Abraham used it to circumcise his son Isaac, was shown to be the basis of most of the others. From it, by simply indenting the edge of the blade, was obtained the saw, while the scissors consisted of two knives, with their blades crossed, pinned at the point of contact, and with their handles perforated, for the introduction of the fingers. The principle of the scissors having been once adopted, it was only necessary to blunt its edges, flatten and expand the blades to the required extent, and roughen their inner surfaces, to obtain the great instrument of extraction, the forceps; while the dilator and speculum were produced by curving the blade horizontally, and moulding them into the form of a tube.

Having illustrated *puncture*, by reference to the needle, the trocar, and their modifications and recent improvements; *division*, by the knife, the scissors, and the saw, in their varied forms of guillotines, craniotomy perforators, trephines, &c.; *compression*, by the ligature forceps, tourniquet, clamp, écraseur, and lithotrite; *extraction*, by the forceps, the scoop, the suction curette, and the catheter; *application of irritants*, by the cautery iron, the caustic holder, the spray producer, and the hypodermic syringe; and *dilatation*, by Thomson's, Holt's, and other forms of stricture splitters,—the writer concluded by drawing a general contrast between the instruments of our generation and those of the previous ones. In this attention was drawn to the greater variety of means for accomplishing known ends, and the greater number of ends arrived at in modern times, and effected by instrumental assistance; to the greater perfection, lightness, and elegance of modern instruments (a surgeon, a few years ago, carried about with him a small portmanteau of pocket-instruments; but now a little case, capable of being stowed away in the waistcoat pocket, supplies all his ordinary wants); to the extensive introduction and varied use made of india-rubber; and to the application of the mirror, and other agencies, into the practice of surgery, never dreamt of in the philosophy of our forefathers.

ART. 99.—*Respiratory Therapeutics.*

(*Medical Times and Gazette*, July 30.)

Great ingenuity has been displayed in the invention of different forms of apparatus for atomizing or nebulizing the fluids; in many of which, as in the instruments of Sales-Girons and Mathieu, the spray-producing power is air compressed by a hand-pump or bellows; while in others, as first in that of Dr. Siegle, steam is the acting power, the patient being able to inhale without the aid of an assistant, or the employment of his own hands to set and keep the instrument in action. Siegle's apparatus, with Bergson's tubes, may be mentioned as being perhaps the most perfect; Bergson's apparatus, with Dr. Andrew Clarke's hand-bulbs, as being the most simple, and extremely useful and convenient; and an excellent little pocket steam apparatus—"the traveller's atomizer"—invented by Dr. Beigel.

In the employment of inhalations by this method, many precautions are necessary as to the number of inhalations, the avoidance of excitement or exertion just before or after inhalation, and so on. It is best, especially with nervous patients, to begin with simple water, and gradually add the medicated solution drop by drop; and in some cases, where even water could not be inhaled, Dr. Beigel has derived advantage from employing milk, after the inhalation of which for some time he has been able to proceed to the use of the desired remedy.

Any article of the *materia medica* soluble in water, or weak alcohol, can be used by the nebulization method, and a great number of medicines have been so employed; but we can here only mention some of them, and the diseases in which they have been used. It is always best to begin with weak solutions, and increase their strength very gradually.

The substances employed in inflammatory affections of the throat are astringents and caustics—viz., tannin (from gr. ij. to gr. x. to the fluid ounce), sulphate of zinc (same strength), perchloride of iron (℥v. to ℥x. to the ounce), alum (gr. j. to gr. v. to the ounce), and nitrate of silver (gr. $\frac{1}{2}$ to gr. v. to the ounce). In simple catarrhal diseases, inhalations of turpentine and of the vapour of chloride of ammonium have been found very serviceable, and Beigel especially commends the latter as being most valuable in the partial or total aphonia of clergymen, singers, actors, &c. Inhalations of carbolic acid (℥xv. to the ounce) have been found of great use in cases of obstinate ulceration, accompanied by fœtor of the breath; and in croup, Beigel has found lime-water (one part to thirty of water), tannin, and bromide of potassium (gr. x. to the ounce) very valuable. Tannin and the perchloride of iron have also been successfully used in diphtheria; oil of turpentine, of cubebs, or of copaiba (℥j. to ℥ij. to the ounce of warm water), in chronic bronchitis, with offensive secretions, in bronchorrhœa, and in gangrene of the lungs; bichloride of mercury (gr. $\frac{1}{2}$ to gr. ij. to the ounce) in syphilitic affections of the pharynx and larynx; liq. potassæ arsenicalis (℥v. to ℥x. to the ounce) in asthma; and in hæmoptysis, tannin and the perchloride of iron; and we should think that ergot of rye—the liquid extract—might also be valuable in hæmoptysis.

It must be observed that in most of the diseases above mentioned the action sought for from the medicated spray is purely, or at least chiefly, topical, as much so as the action of the ether in Dr. Richardson's ingenious application of the spray production, and in some conditions in which the atomizer is extremely useful, *inhalation* by the patient is not only not necessary, but undesirable. Thus, in acute inflammations, or in ulceration, in the fauces or pharynx, solutions may be directly sprayed—if we may use such a word—on to the affected parts, which would be dangerously irritating if inhaled. The *acidum sulphurosum* of the British Pharmacopœia may be thus applied with great advantage in tonsillitis and other acute inflammations of the pharynx; so may solutions of iodine, or other substances; the method replacing with immense advantage the barbarous, imperfect, and cruel mode of trying to apply remedies in such conditions by gargling.

ART. 100.—*The Bromides ; their Physiological Effects and Therapeutic Uses.*

By L. C. McELROY, M.D., Lanesville, Ohio, President Muskingum County Medical Society.

(*New York Medical Journal*, July.)

From a physiological, pathological, and dynamic survey of the human organism, on a physical basis of life, and the inherent relations of certain classes of therapeutic agents to its organic processes and structures, and from the physiological effects and clinical uses of bromine and the bromides, the following general conclusions are deduced :—

1. That from the inherent relations of bromine and the bromides to the organic tissues and structures of the human body, their physiological and therapeutical effects must always be that of promoting destructive metamorphosis, or waste : first, of all matter below the normal dynamic condition ; second, of tissue or structure of type or form foreign to the human body ; and lastly, of the normal tissues themselves.

2. That they are never indicated therapeutically except when there is matter or tissue in the body, which it is desirable to eliminate from it.

3. That they possess neither inherited nor acquired anæsthetic properties, nor hypnotic effects, as chloroform, ether, opium, or cannabis indica, which act by retarding destructive metamorphosis ; but may, by promoting destructive metamorphosis of retained effete matter, be followed indirectly by anæsthetic or hypnotic effects, in the same way as the evaeuation of the bladder of retained urine by the catheter.

4. That they are contra-indicated where nutrition is much impaired, or the rate of tissue-waste more than natural, and where structural changes, or loss of form, by substituting tissue of lower for that of higher organization, have impaired the dynamic integrity of the nerve-masses, as in locomotor ataxy, insanity, spinal paresis, &c.

5. That they are only indicated where the organic processes of life are restrained or interfered with, by adventitious circumstances, to resume their normal working on the removal of the restraint.

6. That their effects on persons living luxuriously, and leading inactive or sedentary lives, and on all in whom tissue-metamorphosis is sluggishly performed, is to increase the rate of waste, and to compensate, to some extent, for the physical exercise necessary to maintain the normal philosophy of tissue-waste or changes.

ART. 101.—*Bromide of Potassium in Saccharine Diabetes.*

By AUSTIN FLINT, M.D.

(*American Practitioner*, January.)

Dr. Flint relates three cases treated by the bromide in doses of 15 to 20 grains, three times a day, combined with ordinary diabetic

diet. In each there was a rapid diminution of thirst, a decrease in the specific gravity of the urine, and an improvement in the general health.

In one of the cases there was a remarkably rapid and great improvement, but, Dr. Flint remarks, "it is by no means as yet certain that the improvement is not chiefly or entirely due to the dietetic management. The case affords a striking example of the tolerance of an anti-diabetic diet. The patient, in addition to all kinds of meat, inclusive of fish, oysters, and eggs, is allowed celery, lettuce, onions, cauliflower, tomatoes, and sour apples. The last-named article, eaten raw and roasted, he finds a very good substitute for potatoes. He takes tea and coffee with cream. He eats butter freely. A small quantity of toasted bread is allowed. Camplin's bran-bread he found unpalatable. With this bill of fare he is thus far perfectly satisfied to give up sugar, and, with the exception of a little bread, all articles abounding in starch. A little sherry or claret wine is not interdicted."

Dr. Flint states that his "object in giving an account of these cases is not to claim in behalf of the bromide of potassium a special curative agency in saccharine diabetes; but to suggest to physicians to make trial of this remedy, in order to determine whether it be not entitled to be classed with other remedies which are sometimes useful. In the first of the three cases its usefulness was apparently clearly manifested."

ART. 102.—*Bromide of Potassium in Sick-headache.*

By L. P. YANDELL, M.D.

(*American Practitioner*, February.)

Dr. Yandell recommends the bromide of potassium as a cure for sick-headache, and states that he had been subject for more than half a century to that affection, when at the suggestion of a medical friend he took half a drachm of bromide of potassium with the happiest effect. He has since resorted to the same remedy on various occasions with equal benefit.

Dr. J. S. Davis, of Iuka, Mississippi, states that he has fully verified the value of the bromide in such cases, and has never found anything comparable to it. He adds:—"My wife has been subject to and sorely afflicted with sick-headache for more than twenty-five years, which has been returning with shorter and shorter intervals for years, until of late a week never passed without a severe attack, and sometimes two or more in one week. For the last four weeks she has been taking the bromide, in five or six grain doses, three times daily, and has never had the slightest return since she has known its use."

ART. 103.—*On the Electrolytic Treatment of Hydatid Tumours of the Liver.**

By C. HILTON FAGGE, M.D., F.R.C.P., and ARTHUR E. DURHAM, F.R.C.S.

(Medical Times and Gazette, November 19.)

This paper is based upon eight cases of hydatid disease of the liver successfully treated by electrolysis. The authors believe that this method of treatment has not hitherto been adopted in any other case of the same nature in the human subject. The operation was performed in the manner recommended by Dr. Althaus in his treatise *On the Electrolytic Treatment of Tumours*. In each case two needles were passed into the tumour, and were connected with the negative pole of a modified Daniell's battery of ten cells. The positive pole, terminating in a moistened sponge, was placed upon the surface of the abdomen. The current was allowed to pass for a period varying from ten to twenty minutes, in different cases. The needles were then withdrawn. A little clear fluid in some cases appeared at the seat of the punctures. No preliminary tapping nor exploratory puncture was made in any case. The diagnosis rested on the facts that the patient had a rounded elastic tumour projecting from the liver, and that this was cystic, as proved by the needles rubbing freely against one another in its interior, although introduced an inch or two apart. The operation was followed in most cases by rapid diminution of the tumour, which even shortly after the operation became soft and flaccid. At the same time, in some cases, fluctuation became perceptible in the lower part of the abdomen. The authors believe that some of the hydatid fluid probably escaped through the punctures made by the needles, having been possibly forced out by the accumulation of hydrogen gas in the interior of the cyst. The success of the operation would thus appear to depend, not on the direct action of the electric current, but on its effecting, as it were, a kind of subcutaneous tapping; and they suggest that simple acupuncture might possibly be followed by equally successful results. Slight febrile symptoms, and more or less pain, in most cases followed the operation; these symptoms, however, rarely lasted more than three or four days. In one instance they were entirely absent. In most cases the patients were able to get about in a few days, and some of them were discharged from the Hospital at the end of two or three weeks. Even at this early period the tumour had already, in some cases, very manifestly decreased in size; and as a rule this decrease, when once it had fairly commenced, steadily progressed. After the lapse of six months or a year, when each patient returned for examination, no trace of the disease remained; or at most there was only some ill-defined fulness of the epigastrium. In one case only the result still remained doubtful. In the remaining seven cases the favourable issue above described had already taken place. All the patients were in perfect health. In each of them the tumour had been

* Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, November 8.

large, and in at least one instance it had reached quite unusual dimensions. In three cases more than one cyst existed, and each cyst had then to be electrolysed separately. In the latter part of the Paper the results of electrolysis are compared with those of simple tapping—the operation which has hitherto been most successful in the cure of hydatid disease of the liver. The authors claim for electrolysis that it rivals simple tapping in being unattended by immediate danger to the life of the patient, and that it is to be preferred, inasmuch as (according to their experience up to the present time) it involves no danger of supuration within the cyst, and consequent risk and suffering—results which often follow simple tapping. The authors conclude their communication by referring to a case in which Dr. Playfair, in accordance with their suggestion, treated an hydatid tumour of the liver by simple acupuncture. The results of this case promised to be favourable; but as yet sufficient time had not elapsed to warrant any decided expression of opinion.

ART. 104.—*On the Action of Carbolic Acid in Variola.**

By M. ISAMBERT.

(*Gazette Hebdomadaire*, No. 28, 1870.)

In order to judge of the efficacy of any plan of medication in so complex a malady as variola, one ought not to base his opinions upon statistics of mortality, for this mortality results from the most diverse causes; as the more or less infectious nature of the epidemic focus, the centre of population in which it is observed, the hygienic state of this population, and finally the individual conditions as modified by diathesis, constitutional, or acquired maladies. M. Chauffard has wisely limited the action which he believes he has recognised in carbolic acid to two facts; the suppression or at least the reduction of the secondary fever, and the much greater rapidity of desiccation with suppression of odour. If these facts be confirmed, we have here a therapeutical discovery of great importance, for by reducing or suppressing the secondary fever of confluent variola, we may reduce this affection to the state of a varioloid.

Unfortunately the observations made by M. Isambert, with very great care and attention to precision, furnish an irrefragable proof of the inefficacy of carbolic acid. In no case were the temperature and pulse modified under its action. The latter during the secondary fever oscillated between 100, 120, and 132 pulsations; the former varied from 39° to 41° Centigrade. The nature of the crusts, the length of the period of suppuration as well as its putridity, were in no way changed or diminished by this therapeutical agent. In addition, it seems to have no power to hinder the formation of secondary abscesses.

Still, as a result of an involuntary error, the agent was for fifteen days administered in enormous doses, which ought to have manifested the power of the remedy if it had been real. M. Isambert having un-

* Communicated to the Société Médicale des Hôpitaux.

derstood that M. Chauffard had given carbolic acid in ten gramme doses without inconvenience, administered it in this quantity to several patients.

Among the observations related by M. Isambert there appears the following, which seems to be demonstrative:—A father of a family being attacked with confluent variola, resolutely took daily for ten days carbolic acid in the enormous dose of ten grammes; he subsequently took half the quantity, and then diminishing doses for three weeks. Notwithstanding this treatment the secondary fever was not modified; from 100 to 120 subcutaneous abscesses had to be opened, and the patient was finally carried off by an attack of purulent pneumonia.

ART. 105.—*On Chloride of Aluminium.*

By EDWARD LUND, F.R.C.S., Surgeon to the Manchester Royal Infirmary.

(*British Medical Journal*, November 19.)

At a meeting of the Manchester Medical Society, on Nov. 2nd, Mr. Lund mentioned some experiments which he had made with this substance as an antiseptic. For surgical purposes he had used a solution having a specific gravity of 1020. He found that it was very irritating to the sound skin, unless the vapour were allowed free exit. In a case of bruise of the arm, he had used it according to antiseptic principles; but extensive sloughing took place, and it had to be discontinued. Mr. Lund showed some meat which had been preserved in it; but he did not think it very good for anatomical purposes, owing to its changing the colour of the tissues.

ART. 106.—*On the Value of Iodide of Potassium in the Treatment of Syphilitic Skin Diseases.*

By J. M'CALL ANDERSON, M.D., Professor of the Practice of Medicine in Anderson's University; Physician to the Royal Infirmary, and to the Dispensary for Skin Diseases, Glasgow.

(*The Lancet*, June 25.)

In speaking of the value of iodide of potassium in the treatment of syphilitic skin diseases, Dr. Anderson lays down the following rules for its use:—

1. The longer the interval which has elapsed between the contraction of the syphilitic taint and the development of the eruption, the more likely is it to be of service.

2. If the patient is cachectic, it is as a rule to be preferred to mercury, except in recent cases of syphilis, when the mercurial vapour bath or some such treatment, is more likely to prove successful.

3. The more extensive the tertiary eruption, the more certain is it to yield to iodide of potassium; although to this rule there are numerous exceptions.

4. If there is any tendency to syphilitic disease of the nostrils or neighbouring parts, iodide of potassium should be withheld, or given with great caution, for if it produces coryza it is very apt to aggravate the morbid condition of the parts.

5. It should be given in full doses.

The last rule is one of great importance, and all the more so seeing that one of the most distinguished surgeons of the present day recently recommended, in one of the medical journals, the administration of doses of three grains; while Dr. Anderson's own experience has led him to conclude that ten grains is the proper dose in the majority of cases, and that occasionally as much as thirty or forty, thrice daily, may be requisite. It is generally advisable to prescribe it in combination with a bitter, and in cachectic subjects a little iron is a valuable addition, as in the following prescription:—Ammonio-citrate of iron, three drachms; iodide of potassium, one ounce; syrup of ginger, six ounces; compound infusion of gentian, eight ounces; water to twenty-four ounces: a tablespoonful in a large wineglassful of water thrice daily.

ART. 107.—*On the Influence of Iodide of Potassium over Salts of Mercury in presence of the various Organic Substances in the Animal Economy.**

By GEORGE E. WALKER, F.R.C.S.

(*Liverpool Medical and Surgical Reports*, October.)

The author maintained, that when mercury is given in the ordinary fashion, with a view to "affect the system," there is no safeguard by which the accumulation of the drug to a poisonous extent can be prevented. Such a safeguard, he argued, was afforded by the combination of iodide of potassium with the salts of mercury, seeing that by this means the precipitation of the metal by albumen and other animal compounds is prevented; also that, even if it be possible to reduce the salt from the condition of peroxidation to that of suboxidation, the iodide of potassium is capable of dissolving the lower oxide of mercury, and so preventing accumulation of that drug. He adduced cases and instances in support of the therapeutic value of the combination, where the combined drugs had been given for long periods, and with very large doses of the metal, without any of the mis-called *physiological*, but more truly named *poisonous*, effects of the drug. He also suggested that by this method mercury might be used harmlessly, at any rate in cases other than syphilitic, where inflammatory deposits were present. He said, further, that the tendency of his observations went to prove that the metal was excreted by the kidneys together with the iodide of potassium.

* Abstract of a Paper read at a Meeting of the Liverpool Medical Institution, Session 1869-70.

ART. 108.—*Iodine as a Topical Application to Wounds, &c.*

By JAMES STIRTON, M.D.

(Medical Times and Gazette, September 3.)

Dr. Stirton gives the following considerations why iodine should hold as good place as, if not better than, carbolic acid as a topical application.

1. Its well-known action, in whatever part of the body, of determining just that degree of congestion (or call it what you will) of the surface which is attended with the production of such a degree of plastic lymph best suited for adhesion of parts in contact.

2. The well-known destructive effect it has on all the living germs that float in the atmosphere, or are carried in water, such as the so-called monads, vibrios, &c. Dr. Stirton mentions this, as the germ theory of many of our acute diseases is now rampant. Query: Might not the application of iodine obviate to a great extent at least the spread of hospital gangrene?

3. Being one of the elements, or at least a very stable substance under any reaction whatever, it is not liable by contact to enter into any unknown, and it may be deleterious, chemical compounds with the living tissues, as carbolic acid may presumably do.

4. As shown in one instance at least, it has a wonderful power of separating dead or dying tissue from the living and active. Dr. Stirton alludes to the case of a carbuncle on himself, where he was gratified with the result.

ART. 109.—*On the Action of Alkalines upon the Organism.**

By MM. RABUTEAU and CONSTANT.

(Archives Générales de Médecine, Septembre, 1870.)

“We experimented with the bicarbonates of potash and soda. In order to discern completely the action of these medicinal agents, we followed during the whole course of the experiments a régime as identical as possible with that followed some days previously.

“One of us took five grammes of bicarbonate of potash daily ($2\frac{1}{2}$ grammes at breakfast, $2\frac{1}{2}$ grammes at dinner) for five days. In comparing the quantities of urea eliminated under the influence of this salt and during the five preceding and the five subsequent days, we found that this substance had diminished by at least twenty per cent. The pulse also had diminished.

“In a woman who had taken for seven days six grammes of bicarbonate of potash daily, the urea diminished by twenty-three per cent. *Both the pulse and the temperature were lowered.* These three results evidently indicate a retardation of combustion.

“Finally, one of us took for six days five grammes of bicarbonate of

* Communicated to the Académie des Sciences.

soda daily. The diminution of the urea was at times greater than twenty per cent., and the cardiac movements were weakened.

"The appetite also was diminished, so that one of us could not take without difficulty the prescribed ration of food. Commencing anæmia was also manifested, especially in the woman, who took altogether forty-two grammes of bicarbonate of potash. This last fact proves a diminution of blood corpuscles, a diminution which direct experiments commenced on animals had previously enabled us to make out. Finally, we noticed a general prostration, especially under the influence of bicarbonate of potash.

"1. There exists a group of cooling medicinal agents, the refrigerants of Linnæus, among which are found acid fruits. But as these fruits give rise in the economy to alkaline carbonates, one is obliged to admit that they act at first as cooling, and afterwards as oxydizing medicinal agents. Our experiments proved that these substances are cooling agents from the moment of their introduction into the economy until their complete elimination.

"2. Certain maladies that are essentially febrile, such as acute articular rheumatism and even pneumonia, are favourably influenced by alkalies. One knows that these medicinal agents, far from producing incendiary effects, due to a supposed increase of oxidation, cause in these diseases a general diminution of both the pulse and temperature, as has been confirmed by our experiments.

"3. If alkalies favour oxidation, they ought to act as heroic medicinal agents in glycosuria and albuminuria. But in these maladies the alkaline waters have often produced the most disastrous effects.

"4. Medicinal agents that help oxidation, increase the vital force. Such is marine salt, which, when added in excess to food, produces, according to the researches of M. Rabuteau, an increase in the urea of twenty per cent. But the alkalies produce effects directly opposite. We may say, however, that *in very feeble doses* they do not diminish oxidation, but that, on the contrary, they appear to augment it, a fact which we explain by their transformation into chlorine in the stomach with the aid of the hydrochloric acid of the gastric juice. Then we are no longer working with an alkaline agent.

"Such are the chief results of our researches, and the chief deductions which can be drawn from them. With regard to the cause of these effects from the use of alkalines, we believe that it resides in their primary action upon the blood corpuscles, which they destroy, since these globules are the carrying agents of oxygen and consequently the direct agents of oxidation.

"We say nothing about alkalines considered as lithotriptic in instances of uric acid calculus. Their action here is perfectly clear, and we have nothing further to add. We will, however, raise our voice against the opinion still admitted by some physicians, that alkalines may be useful against all calculi, even including those of phosphatic composition. In fact, according to our experiences, the urine which is generally clear under the full influence of the alkalines, is turbid on the first day of the injection of these medicinal agents. This exception is conformable to facts already mentioned by Wöhler, who noticed that the urine under the influence of alkalines deposited earthy phosphates."

ART. 110.—*On Disinfectants.*

By Dr. F. DE RANSE.

(Gazette Médicale de Paris, No. 35, 1870.)

“From the comparative study of their mode of action it results that these agents may be divided into two classes. Some, as chlorine, the hyperchlorites, the sulphites, permanganate of potash, &c., are veritable disinfectants, and destroy odours by oxydising or decomposing the ill-smelling or putrid matter; others, as creasote, coal-tar, pitch, and carbolic acid, do not destroy the ill-smelling material, but arrest and hinder fermentation, and thus prevent the production of fresh odours. Hence in practice, their application, which seems to be very clearly indicated.

“If it is desired to attack any place already infected, one ought to have recourse at once to the first class of agents; if the question be one of preventing the primary or secondary infection of this same place, one would prefer agents of the second class.

“It will be the same when we have to deal with a wounded individual, or the subject of a disease like variola. If we are about to treat a commencing septicæmia, it will be more opportune perhaps to administer sulphites or hyposulphites, which will act directly upon the septic material already produced. This same material, which is not affected by carbolic acid, would be eliminated in cases where one administers this medicinal agent, and if the elimination be insufficient it would produce irreparably bad symptoms.

“It seems more logical, however, to prefer the preventive action of fermenticide applications to the curative action of oxydizing antiseptics; and hence probably the indication for submitting subjects severely wounded, cases of amputation, and also variolous, choleraic, typhoid, and dysenteric patients to an immediate treatment by carbolic acid applied both externally and internally. This agent prevents the manifestation of the very fœtid odour proceeding from variolous patients arrived at the stage of suppuration, or, in other terms, it prevents the decomposition of the pus furnished by the pustules. May not one hope that it will likewise prevent the same alteration of the pus furnished by wounds or by intestinal ulcerations? Induction or analogy is surely permitted. The action of quinine against purulent infection has been vaunted. In cases of this kind quinine acts especially as an antiseptic, for septicæmia almost always complicates pyæmia; if one does not succeed with this medicinal agent more frequently, it is probably because it is administered too late, the symptoms having been already declared and the poison circulated in the blood. But if, by a treatment in some way prophylactic, one can hinder the occurrence of these primary accidents, the formation of the poison may probably be prevented, so that there will no longer be any septicæmia or even pyæmia. Surely these views rest upon a rational interpretation of certain facts, and it is possible that other facts may arise to prove that they are justifiable. The harmlessness of the internal administration of carbolic acid authorises one in having recourse on this matter to the judgment and control of experimentation.”

ART. 111.—*On the Sulpho-Carbolates, and the Antiseptic Method in Medicine.**

By A. ERNEST SANSOM, M.D.

(*The Lancet*, August 13.)

The author alluded to the difference of opinion with regard to what is termed the "germ theory" of disease. He thought that much of the diversity depended on the connotation of the word "germ." There is abundant evidence that the "contagia" of transmissible disease are material and organic; they bear a strong analogy to ferments in their mode of operation; whatever the initial cause of each, the existence of organized material possessed of reproductive powers is intimately bound up with both processes. The author alluded to the recent researches of Chauveau on vaccine, glanders, and sheep-pox, as showing that the activity of the "contagia" depended on the solid particles proved by Beale to be actively moving masses of bioplasm. He considered that the efficacy of disinfectant and antiseptic measures was due to no obvious chemical influence, but to the poisoning of those septic organisms which are intermediary agents of decomposition between organic and inorganic matter. He thought that the proliferation of contagia (bioplasm) might be checked within the living body, and discussed Polli's treatment by the sulphites. From the well-known properties of carbolic acid he hoped more from the sulpho-carbolates, of which he gave a succinct description. (1) *The alkaline sulpho-carbolates.* There was evidence of great success from the administration of the sodium salt in throat ulcerations and in scarlatina. There was promise of success in variola. In enteric fever, Dr. Ligertwood, of Newbury, considered the treatment to be efficacious. (2) *Sulpho-carbolates of alkaline-earth metals.* Of these the most interesting is the calcium salt, of extraordinary solubility, which the author had employed in cases of rickets with remarkable success. (3) *Sulpho-carbolates of the metals.* The zinc and copper salts had been used by surgeons, especially by Mr. John Wood, as antiseptic dressings for wounds, and a very favourable opinion of them had been given. The author had employed the iron salt internally, with varying success; he was doubtful whether it had any advantage over salts of iron. In conclusion, he hoped that the remedies would be tried upon their merits, as he considered that, all theory apart, they would prove a useful addition to the materia medica.

ART. 112.—*Therapeutical Uses of Electricity.*

By J. RUSSELL REYNOLDS, M.D., F.R.S.

(*The Lancet*, July 23.)

"By the aid of electricity," Dr. Reynolds says, "we may in some instances cure a disease—*e.g.*, one of hysterical aphonia; in other cases, we may relieve the patient, of pain, spasm, and paralysis; and in some

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-on-Tyne, August, 1870.

other cases, although we can neither cure the disease, nor actually diminish the symptoms, we may prevent their further progress.

"Remembering the objects we have in view," Dr. Reynolds continues, "let me recall to you for a moment what it is that electricity can do, in its several forms, in order that you may understand the better how to apply it to the various conditions of disease.

"First, it may be called into action, or it may increase the action, of a nerve or a muscle; and this is what you want it to do when nerve or muscle is in a state of inaction or under-action.

"Secondly, electricity may reduce, or even annihilate, for a time, the action of a nerve or muscle; and this it is that you may sometimes want to accomplish when a nerve or a muscle is over-active. You can therefore use it, on the one hand, to reduce action or to stop action, when this is excessive; or, on the other, to bring out the action of a dormant muscle or a dormant nerve. If you have paralysis, loss of sensation, or loss of contractility in a muscle, you may, in many cases, so use electricity as to restore voluntary movement, to restore contractility, to restore sensation. If you have pain, over-action, or spasm—whether tonic or clonic—you may so use electricity as to diminish those conditions, and bring nerve and muscle to their normal states. The mode in which you use electricity will determine the effect that you produce.

"(a) The under-action of muscle or nerve shows itself in either paralysis—using that term in its widest and most general sense—or in anæsthesia; or in diminished sensation—'hypæsthesia,' as it is sometimes called. It shows itself also in weakness of a limb; there need not be what we call 'paralysis,' but the limb on one side is weaker than on the other, although it is still under the influence of the will: by a strong effort, the patient may do something with it—may indeed put all its muscles into play, but the movements are slowly produced, and are wanting in force. Still further, this condition of under-action shows itself in a relative softness of muscle and a flabbiness of limb; although, if you take a tape and carefully measure it, you will find it of the same size as its fellow. You can feel a great difference, which you cannot always represent by figures; but often there is, as the expression of central disease, actual, obvious, and measurable wasting of muscles, and of the other tissues of the limbs.

"(b) The over-action, or perverted action, of a nerve or muscle shows itself by spasm, as contrasted with paralysis; by hyperæsthesia, as contrasted with anæsthesia; or by spontaneous pain, or something which is not spontaneous pain, or genuine hyperæsthesia, but which has been called 'dysæsthesia'—viz., a painfulness of those sensations which are habitually unfelt when produced by ordinary impressions. For instance, when there is 'intolerance of light,' it is not that the patient can see better than you or I; he cannot see nearly so well, but he suffers pain during the ordinary act of vision. Do not confound this with genuine hyperæsthesia. The latter is rare, the former comparatively common; but both may be sometimes relieved by electricity.

"There are, further, two conditions of the muscles which are the opposites of those I mentioned just now—viz., first, hardness of a limb, where it does not amount to actual rigidity; and secondly, actual rigidity, in which it is difficult to flex or extend the arm or leg. Fur-

ther, there is tremulousness of a muscle; and lastly, clonic spasm, showing itself in slight fibrillar twitching, or in catching movements of the limbs. These are all signs of an over-action that may sometimes be reduced by electricity.

“As part of its effect upon muscular fibre, you must regard also the action of electricity upon the vessels. The effect on vessels is simply an extension into another region of that which I have already told you occurs in voluntary muscular tissue. There are certain contractile fibres in the walls of the vessels, and you can influence them by electricity in the same way as you can other muscular fibres. If the vessels are dilated, as they very often are, in paralysed limbs, you find that the skin has a dusky, bluish-red tint, and that the limb is cold. Look at the hands of a semi-paralysed patient; you find the nails bluish-red, the extremities cold, and the capillary vessels large. No part of the hand is actually white, all is dusky pink. Here electricity is useful; it contracts the dilated vessels, and induces a healthy state of the circulation in the limb, which no other means will produce so readily. You can do this, as I have seen again and again, without any electrification of the voluntary muscles. If you act on the muscles of the limb, and draw the hand first one way and then another, you gradually increase the circulation; but without calling forth the action of any of these muscles, you can restore or much improve the circulation in the skin, by a simply superficial electrification.

“It is possible that electricity might have some effect upon another condition of blood-supply, just the opposite to the last—viz., that in which the vessel is contracted by the spasm of its contractile fibre. I do not know that here electricity has been of any practical service; but it is possible that, under some circumstances, it might be of use. At the commencement of an epileptic seizure, there is often a curious pallor of the face, and to a condition analogous to this in the pia mater it is probable that the loss of consciousness is due. It is possible that if one could catch a patient going off into a fit, one might stop or check the paroxysm. In those persons who are subject to sudden pallors coming over the face, it is possible that by a due administration of electricity something might be done. I know of no reliable clinical facts about the electric treatment of this state of spasm; but in the other condition, in which you get engorged vessels from loss of contractility of the fibre, electricity has been very useful.

“And now what are the modes of using electricity for therapeutical purposes? Over-activity of a muscle, or nerve, or vessel, may be reduced by the application of the continuous galvanic current, direct in its course through the limb, passing, that is to say, downwards and not upwards. And remember, please, that this continuous current should not be so strong as to cause pain; it should be applied so as not to irritate the skin, and it should be applied in the course of the nerve, from above downwards.

“Another form of electricity—faradization—may also be employed to reduce over-activity. If you find, for example, a man suffering from torticollis—spasmodic wry-neck—the sterno-cleido-mastoid and other muscles of one side acting most violently, and turning the head over to the opposite shoulder—you may stop that by passing through the sterno-

cleido-mastoid muscle a galvanic current, or by applying weak faradization, rapidly interrupted. The interruptions have to be very rapid, for if they are not so the application only increases the muscular action. The interruption in a rotatory magneto-electric machine is scarcely rapid enough, and is often very irregular; one of Stöhrer's batteries may be used. Remember then that the over-action of a muscle may be reduced by the application of faradization, as well as by the continuous current; but that the faradization must be weak, and rapidly interrupted. Another way by which you may reduce the over-action of a muscle is by faradizing the antagonistic muscle. Supposing the flexors of the arm are contracted, as in some cases of 'late rigidity,' and you find it difficult to get the fingers open,—the best mode of overcoming that condition is to apply faradization, not to the muscles affected, but to the other muscles, the extensors, so as to antagonize them. Again, in the case of torticollis, where a man's head goes jolting over to one side, you can reduce the over-action by putting the antagonist muscles into action by faradization, and so pulling the head round into its proper position.

"By the third form of electricity also—static or franklinic electricity—you may reduce over-action. For instance, in some forms of tonic spasm and painful affections of nerves you may reduce the over-action by charging the patient from a friction machine. Thus, those over-sensitive conditions of nerves which go by the name of neuralgiæ may many of them be at once removed by a charge of static electricity; and in the same manner the electric charge may be employed for the reduction of clonic spasm, or of that tremulous condition which resembles or passes into the state of paralysis agitans."

ART. 113.—*Comparative value of the Galvanic and Faradic Currents.*

By A. D. ROCKWELL, M.D.

(*The Medical Record*, June 1.)

From the accumulating results of experiment and experience in electro-physiology, diagnosis, and therapeutics, Dr. Rockwell thinks that there is strong reason for regarding the essential distinction in the effects of these currents on the body as mainly of *degree*, and that this is the scientific basis for their differential employment.

The advantages of the galvanic over the faradic current are:—

1st. *A greater power of overcoming resistance.*

It therefore affects the brain, spinal cord, and sympathetic more powerfully than the faradic, since the anatomical position of these parts is such that considerable resistance must be overcome in order to directly affect them.

For the same reason it is usually to be preferred when it is desired to affect the middle and internal ear, the retina, and the muscles of the eye.

2nd. *A power of producing muscular contractions in cases where the faradic fails.*

This peculiarity of the galvanic current has been observed so frequently, and in such striking instances, that it has become an accepted fact of electro-therapeutical science.

After a certain amount of treatment by the galvanic current, the paralysed muscles frequently resume their susceptibility to the faradic.

3rd. *A different and far more potent chemical action.*

The chemical power of the galvanic current is most markedly seen when used for the purpose of galvano-cautery, or "galvano-caustic chemique."

In order to produce the energetic caustic effects of the galvanic current, it is necessary to use elements that generate quantity of electricity, and to combine them in such a way that the quantity produced shall be very large, since an ordinary single element, or indeed a large number of elements arranged for intensity, exhibit only a comparatively feeble cauterizing effect. It is because the galvanic current can be thus arranged for quantity, more than in any difference in kind between the effects of the two currents, that it has so marked and peculiar a superiority to the faradic as to practically amount to a difference in kind. The quantity of the faradic can be but slightly increased, and hence, although it does possess some chemical virtues and produces slight chemical effects, it is not indicated where such effects must be very energetic or concentrated. The superior efficacy of the galvanic current to the faradic, so often observed in the treatment of neuralgia, of atrophied muscles, rheumatism, &c., is probably due to its greater chemical or catalytic action. It probably induces more rapid and more important molecular and other changes in the tissues.

The advantages of the faradic over the galvanic currents are these:—

1st. *By virtue of its frequent interruptions it more easily produces muscular contractions when passed over the muscles or the nerves that supply them.*

In order to produce muscular contractions with the galvanic current, it is necessary to interrupt the current, and unless it is quite powerful, to localize at least one of the electrodes over the motor nerve by which the muscle is supplied. On the contrary, the faradic current is in a condition of rapid interruptions, and produces contractions when indifferently passed over the surface of the muscle, as well as when localized on the main motor nerve that supplies it. This advantage of the faradic current is best appreciated in *general electrization*, the powerful tonic effects of which are partly and quite largely due to the passive exercise, and consequent important changes of tissue that result from the several thousand muscular contractions that take place during an ordinary sitting. In localized electrization this advantage is not so clearly or strongly marked, since in this method, by a proper knowledge of electro-therapeutical anatomy and sufficient care, it is possible to direct one of the electrodes on the motor points; and yet even here the faradic current is much more convenient, because its employment requires no arrangement for interruptions and less minuteness of attention to the situation of the "motor points." The exceptional cases of paralysis, where the muscles have lost their susceptibility to the faradic current, do not interfere with the general rule.

2nd. *It is less likely to produce unpleasant or harmful effects than the galvanic.*

In certain acute and chronic pathological conditions, where it is desirable to produce a decidedly stimulating effect without marked catalytic action, the faradic current can alone be used with benefit and safety.

Experience teaches that wherever the constant current can be used without injury, there also will a faradic current of relative intensity be harmless. It teaches further, that in certain conditions where the faradic current is not only harmless, but of decided benefit, the galvanic, even when its tension is very slight, may occasion evil results.

One of the most important advantages possessed by the galvanic over the faradic current is the readiness with which the former affects the sympathetic.

The attention of the profession was first called to this fact by Remak, who observed the occurrence of diplegic contractions when the superior cervical sympathetic was submitted to the influence of the constant current.

This observation of Remak was confirmed by Fieber, who produced similar phenomena in the living animal by exposing the sympathetic and directly galvanizing it.

It does not come within the scope of this short paper to theorize at length concerning the beneficial results following galvanization of the sympathetic.

In those cases of paralysis of vaso-motor nerves and arterial spasm that are benefited by this method of treatment, the favourable results may be ascribed in brief to the influence exerted on the vaso-motor nerves.

ART. 114.—*Electrolysis in Bronchocele and other Tumours.*

By ADOLPHE WAHLTUCH, M.D.

(*British Medical Journal*, November 5.)

At a meeting of the Manchester Medical Society, on October 5, Dr. Wahltuch read a paper on a case of bronchocele successfully treated by electrolysis and the subcutaneous injection of iodine. The patient was a lady, aged twenty-seven. The tumour was of the size of a hen's egg, and had existed four years. Various means had been tried to reduce it without effect. The electrolytic treatment was begun in July, 1869. At first, eight Daniell's elements were used, and one needle inserted. These were gradually increased to sixteen elements and four needles. The operation was performed first twice, then once a week, till January 5th, 1870; in all, twenty-eight times. The mode of application was to insert into the tumour a needle connected with the negative pole of Althaus's permanent battery, and to close the circuit with a sponge on the skin from the positive pole. The current was kept up for ten minutes at first, gradually increasing to sixty minutes. After the twenty-fourth application the tumour was reduced to the size of a hazel-nut, and then remained stationary. The treatment was therefore suspended for a time,

and then iodine was injected, the quantity and strength being gradually increased. From February to July, Dr. Wahltsch operated sixteen times; and at the latter date, the tumour had disappeared. In September there was no recurrence of it. Dr. Wahltsch explained the details to be attended to, and said that no pain or inconvenience was complained of. He then described the mode of action of electrolysis, and afterwards reported several other cases in which he had used it with success, such as warts and cystic tumours.

ART. 115.—*On the Value of the Different Methods of Electrization.*

By Dr. DUCHENNE, of Boulogne.

(*Archives Générales de Médecine*, Août, 1870.)

The following is a résumé of Dr. Duchenne's critical examination of the different methods of electrization:—

"1. Localized electrization is an excellent and the best method of electrization to the treatment of atrophic forms of paralysis, and principally of paralysis following traumatic lesions of the mixed nerves.

"The exclusive partisans of the therapeutical application of continuous currents, who, with the object of extolling this electro-therapeutic method, have charged localized faradization not only with inutility in the treatment of paralysis with or without atrophy, but also with doing harm by exercising a paralyzing action upon the vaso-motor nerves, have, I hold, ignored or misunderstood the admirable results of the therapeutical applications of localized faradization made in the treatment of these affections for more than twenty years on a large scale. Consequently, if they have not obtained the same results they ought to attribute the fault to themselves, in not having followed in their practice the precepts which I have established from long clinical experimentation. Moreover, it is proved that the majority of them have not made comparative experiments upon the therapeutical value of localized faradization and continuous currents.

"2. The electro-physiological experiments made by many of these partisans, which have served as a base for the recent attacks directed against the therapeutical application of localized faradization, have been badly interpreted, or are not exact. In fact, contrary to certain assertions, constant continuous currents and currents of induction in equivalent doses, exercise an identical action upon the vaso-motor constrictors.

"3. The therapeutical action of localized faradization is exerted principally on nutrition: firstly, by augmenting the tonic force of the vascular constrictors by excitation of the ramifications of the sympathetic which accompany the small arteries; secondly, by increasing the activity of the local circulation through excitation of the dilating nerves of the vessels, the existence of which, demonstrated by experimentation if not by anatomy, is necessary as a moderating agent of the vaso-motor constrictors; thirdly, by exciting the nerves which act directly upon nutrition, whatever may be the theory or the mechanism of this action."

ART. 116.—*On Hydrate of Chloral.**

By MARTIN OXLEY, M.D.

(Liverpool Medical and Surgical Reports, October.)

After curtly describing the chemical nature and physical properties of hydrate of chloral, the author proceeded to discuss the physiological action of chloral. According to Liebreich, Richardson, and others, chloral is decomposed by the alkali of the blood, so that chloroform is gradually liberated. The action of this substance on the nervous system is primarily on the sympathetic ganglia, afterwards on the cerebrum. In the case of an over-dose, the functions are destroyed in the following order: *a*, cerebral; *b*, the voluntary muscular; *c*, the respiratory; *d*, the heart. Chloral produces muscular relaxation, which relaxation extends to the muscles of volition, and also to the iris. Deep and prolonged narcotism may be produced by the drug, and during a portion of the time there may be complete anæsthesia, with entire absence of reflex action. Dr. Noir reports a case in which he administered 75 grains, and amputated a leg, without the patient moving or uttering a sound. The coma for an hour afterwards, and violent delirium on waking, would prevent Dr. Noir recommending its use under similar circumstances.

With regard to the mode of administration, chloral may be given by the mouth, by the rectum, and by hypodermic injection. Of these methods, the one to be preferred is by the mouth. Its acrid taste requires it to be largely diluted, and mixed with some aromatic, or with plain syrup.

The dose, as an hypnotic, is ten grains to begin with, increasing it to thirty, or even to sixty grains. The greater the necessity, as in the case of severe pain, the larger is the dose required. When given as a sedative, it is well to administer it in divided doses of from five to ten grains, repeated every three or four hours.

The author had found the following to be its principal applications. For the relief of pain, as after operations, neuralgia and angina pectoris, and in cases of painful joint-disease. In cases where patients suffering from bronchitis or Bright's disease are prevented from sleeping, and where it is impossible to give opium with safety, the drug is most valuable. In insomnia of a nervous character it will also be found most useful, very small doses generally have the desired effect. In cases of nervous irritability, a dose of five grains, repeated two or three times daily, will in almost every instance produce a sense of ease and comfort.

In insanity, Dr. Tuke states that he considers this medicine to be the most valuable means of procuring sleep which has yet been introduced into the pharmacopœia of the Asylum physician.

As an hypnotic in the delirium of typhus, Dr. Russell, of Glasgow, has used it largely, and reports a number of cases in which it produced

* Abstract of a Paper read at a Meeting of the Liverpool Medical Institution, Session 1869-70.

sleep, and subdued the most violent delirium. In chorea, the author had found it only useful as an hypnotic, in cases where the violence of the movements prevented sleep, and rendered the case hopeless; but as a cure of the disease *per se*, this drug is quite useless. In puerperal convulsions, hydrate of chloral has been administered with the best results. As a sedative in whooping-cough, two or three grains, repeated frequently, relieve the patient rapidly.

Again, in teething, this drug is most useful, and removes at once all irritation.

In the author's experience (which, since the reading of this paper in the early part of the year, has been amply confirmed), this medicine in many cases produces effects which, if not explained, may tend to prevent the employment of this very useful drug. The most constant of these is vomiting almost immediately after it is swallowed; but this may be avoided by giving it largely diluted. At other times it produces troublesome dreams, strange tingling feelings in the tips of the fingers, in the palms of the hand, and soles of the feet; at other times a feeling as if the patient were overcome by drink is experienced. These symptoms, it should be noted, are generally owing to the dose being too small, and it ought to be cautiously increased. Finally, if given in a larger dose than is required to produce sleep, poisonous effects may ensue, as in the case reported by Dr. Reynolds.

ART. 117.—*Hydrate of Chloral in Pertussis.*

By CHARLES MURCHISON, M.D., LL.D., F.R.S., Physician
to the Middlesex Hospital, &c.

(*The Lancet*, October 29.)

The following case illustrates the good effects of the hydrate of chloral in subduing the spasmodic cough of pertussis. The patient was a little girl, aged four, who was admitted into the Middlesex Hospital on April 11th, suffering from severe pertussis of about six weeks' duration, complicated with pneumonia and bronchitis. Various remedies, including belladonna and ipecacuanha, produced little or no effect upon the paroxysms, but improvement at once followed the use of chloral in doses of five grains every four hours, and within a week the paroxysms had almost ceased.

ART. 118.—*Ill Effects of Chloral; Clinical Remarks.*

Under the care of Dr. HABERSHON at Guy's Hospital.

(*The Lancet*, September 17.)

A patient of Dr. Habershon, affected with aneurism of the thoracic aorta, suffering great pain and occasional attacks of dyspnoea, was ordered half a drachm of chloral at night, with a view to giving relief and procuring sleep. He became unconscious immediately after swal-

lowing the draught ; the face and hands turned livid and cold, and he breathed only at long intervals ; indeed, for about five hours death seemed to be impending. In the course of the next day, however, he had so far recovered as to be to all appearance none the worse for the dose. Dr. Habershon said that this was the first time he had administered chloral to a patient suffering from aneurism, and that the result confirmed the opinion he had formed from observation of its effects in cases of pneumonia and bronchitis, that through the means of the pneumogastric nerve it had a tendency to produce congestion of the bronchial tubes and the lung generally, and is not a suitable medicine in cases where the respiration is liable to embarrassment.

ART. 119.—*On the Influence exerted by Chloral on the Pain of Parturition.*

By E. LAMBERT, Paris, late House-Surgeon in the
Maternity Hospital, Edinburgh.

(*Edinburgh Medical Journal*, August.)

The following are the conclusions at which Mr. Lambert has arrived:—

1. Chloral is an agent of great value in the relief of pain during parturition.

2. It may be administered under favourable circumstances during and at the close of the second stage, with the result of producing absolute unconsciousness in the same sense in which we understand unconsciousness under chloroform.

3. When thus given successfully, it has this advantage over chloroform, that it requires no interference with the patient.

4. It is desirable to retain chloroform in the position which it at present occupies in midwifery, and to reserve for the agency of chloral the first stage of labour. If, however, chloral or some agent having analogous properties is found successfully to relieve the pain of uterine contraction, the use of chloroform will be restricted to a lesser period of the duration of labour, or to the facilitation of manual or instrumental interference.

5. It is demonstrated that a labour can be conducted from its commencement to its termination, without any consciousness on the part of the patient, under the sole influence of chloral.

6. The exhibition of chloral in nowise interferes with the exhibition of chloroform.

7. The proper mode of exhibiting chloral is in fractional doses of grs. xv every quarter of an hour until some effect is produced ; and according to the nature of that effect the further administration is to be regulated. Some patients will require doses of $\mathfrak{z}\mathfrak{j}$, and it is better to produce an anæsthetic effect by $\mathfrak{z}\mathfrak{i}\mathfrak{j}$ given in the space of two hours than by $\mathfrak{z}\mathfrak{j}$ given singly.

8. The effects of chloral are continued beyond the period of completed parturition, and the repose experienced by the patient after her

labour is one of the favourable circumstances to be noted in considering its application to childbirth.

9. Any stimulating effects, in the form of general excitability, occasionally observed during the administration, have passed away very rapidly.

10. Chloral not only does not suspend, but rather promotes uterine contraction, by suspending all reflex actions which tend to counteract the incitability of the centres of organic motion.

11. Labours under chloral will probably be found to be of shorter duration than when natural, for unconscious contractions appear to have more potent effects than those which are accompanied by sensation of pains.

12. Experiments are required in order to determine whether there exists the same antagonism between ergot and chloral as is known to exist between strychnia and chloral.

13. The general conditions under which chloral is to be administered are the same as those which regulate the administration of chloroform, and the rules laid down by Sir James Simpson in connexion with this subject must be rigidly adhered to.

ART. 120.—*Action of Hydrate of Chloral in Paralysis of the Insane and other forms of Insanity.*

By WILLIAM MACLEOD, M.D., Deputy-Inspector of Hospitals and Fleets.

(*The Practitioner*, August.)

The following are Dr. Maeleod's conclusions:—

1. That in paralysis of the insane, where the patients are destructive and violent, the judicious administration of chloral acts as an excellent hypnotic by night and soothing agent by day.

2. That under its action the patients have been free from destructive habits, and have gained in weight and strength.

3. That in one case as much as 2810 grains were taken during ninety-five days, the daily average taken being 30 grains. In a second case as much as 2435 grains were taken during 122 days, being at the rate of 22 grains daily; when the patient gave evidence of prostration. A third patient took 2380 grains during eighty days, the daily average being 28 grains, with no bad symptoms. A fourth patient took 1362 grains during sixty-seven days, the daily average being 20 grains, with no bad symptoms. A fifth patient took 501 in twenty-four days, giving a daily average of 25 grains, with no bad symptoms.

4. That under it the action of the bowels and bladder has improved.

5. That in no case has there been a refusal of food; on the contrary, the appetite of the paralytic patients increased.

6. That patients suffering from abnormal sensation derived much benefit from it.

7. That in patients subject to hallucinations of hearing, with suicidal tendencies, it has cut short the hallucinations.

8. That in patients liable to hallucinations of hearing, and under their influence becoming excited and noisy, it has produced calm.

9. That in patients with a propensity periodically to maim and hurt themselves, the desire has passed away under the influence of chloral.

10. That in patients who suffer incessantly from voices, it has been given with partial benefit only. This refers to patients who were aware that the voices depended on morbid sensations.

11. In certain cases of melancholia benefit was derived from its administration, and convalescence advanced.

12. That in another case of melancholia with extreme depression, and the intellect being good, no permanent benefit was derived, except that under its administration the bloody exudation from the stomach completely disappeared.

13. That the greater the disorganization of the brain and cord (as judged by the symptoms, and especially by thermometrical observations) the sooner does the system come under chloral action.

ART. 121.—*Acetic Ether as an Anæsthetic.*

By HORATIO C. WOOD, M.D.

(*American Journal of the Medical Sciences*, July.)

At a recent meeting of the College of Physicians, Philadelphia, Dr. Wood spoke of the prevalent dissatisfaction of the profession with our present anæsthetics, and the consequent search, especially in London, for new ones. He exhibited a specimen of *acetic ether* to the college, prepared for him by Mr. Charles Bullock, of Philadelphia, and stated that he had not yet tried to fully anæsthetize the human subject, but in pigeons and rabbits it produced perfect unconsciousness without nearly so much previous struggling as when ether was used. It has a peculiar, pleasant odour, very closely resembling that of apples, which no doubt owe their smell to it or the closely allied malic ether. An advantage which it has over sulphuric ether, especially for night use, is its comparative non-inflammability, connected partly with its lesser volatility. A pigeon passes gently into an insensible state, and awakes without struggling after a few minutes of quiet sleep.

ART. 122.—*The true Normal Amylic Alcohol.*

(*The Lancet*, September 24.)

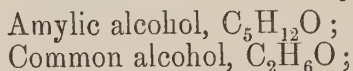
In the *Comptes Rendus* for August 16th there is an account of a most interesting piece of chemical investigation by Lieben and Rossi.

The amylic alcohol occurring in fousel oil bears a striking likeness in chemical character to common alcohol. By subjecting common alcohol to various processes, it may be converted into an immense variety of products. Thus, treated in certain ways with acids, it yields compound ethers; and when carefully oxidized it yields aldehyde and acetic acid.

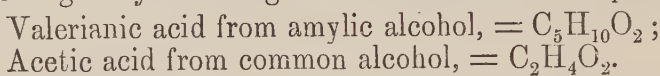
Now there is hardly one out of the immense number of products derived from common alcohol which is unrepresented by an analogous product derivable by an analogous process from amylic alcohol.

The fact of the existence of a chemical likeness of this marvellous kind between amylic alcohol and common alcohol, and of the frequent occurrence of likenesses of this sort in organic chemistry, gave rise to the doctrine of chemical homology. It was, moreover, observed that in cases of this likeness, such as the case of amylic alcohol and common alcohol, the chemical compounds related to one another differed from one another in chemical formula by CH_2 or by $n (\text{CH}_2)$.

Amylic alcohol differs from common alcohol by $3 (\text{CH}_2)$; *e.g.* :—

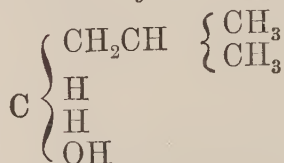


and every product obtained from amylic alcohol by any process differs from the analogous product obtained from common alcohol by $3 (\text{CH}_2)$. Thus the acids got by oxidizing the two alcohols are respectively—

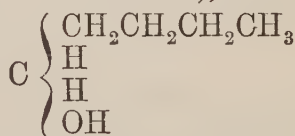


By studying this example a good idea of the Laurent-Gerhardt doctrine of homology may be derived. Homologues in chemistry are compounds which differ from one another by $n (\text{CH}_2)$, but not otherwise, in structure, and which are capable of yielding parallel products. Since the doctrine was propounded some fifteen years ago, our ideas of the possibility of differences in structure have undergone great extension. Two or three years ago it was announced that the amylic alcohol of fousel oil (despite its so close resemblance to common alcohol) did differ in structure from common alcohol by something more than $3 (\text{CH}_2)$ —that it was *not perfectly homologous* with common alcohol. This discovery flowed very naturally from the splendid theory of primary, secondary, and tertiary alcohols, the initiation of which we owe to the speculations of Kolbe, and the researches of Wurtz, Friedel, Erlenmeyer, and Wanklyn. The discovery by Lieben and Rossi, which forms the occasion of this chemical sketch, is the formation by a precise and intelligible method of the true normal amylic alcohol, a true homologue of common alcohol, a chemical compound differing structurally from common alcohol by $3 (\text{CH}_2)$, and *by nothing else*. The differences in structure between the amylic alcohol of fousel oil and that of Lieben and Rossi are shown by the following formulæ:—

Amylic Alcohol from Fousel Oil.



Amylic Alcohol (Lieben and Rossi), normal.



Most interesting and most satisfying to the mind is it to learn that Lieben and Rossi's normal alcohol presents all those characteristic differences from the old amylic alcohol which investigation had led chemists to assign to a true normal alcohol. Its own boiling point, and the boiling point of all its ethers and other derivatives (so far as yet investigated),

are higher than the boiling points of the corresponding compounds in the old amylic series. Thus, derived by oxidizing it, there is a new valerianic acid of higher boiling point than the old valerianic acid. The method by which Lieben and Rossi have made their new alcohol is, as we have said, a precise and intelligible one. They took the normal butylic alcohol (discovered by themselves), and from it made cyanide of normal butyl. From cyanide of normal butyl they got normal valerianic acid; from that they got normal valeral; and from that, by hydrogenation, they made the normal amylic alcohol.

ART. 123.—*On the Preparations of Conium and their Doses.**

By HENRY DODGSON, M.D., Cockermouth.

(*British Medical Journal*, November 5.)

Dr. Dodgson commenced by stating that his attention had been called to the subject on reading the notes of the Gulstonian Lectures, by Dr. John Harley, on Conium, Belladonna, and Hyoseyamus; and by a subsequent paper in the *Practitioner*, by the same author, on the Treatment of Chorea by the Succus Conii. He was surprised to find that Dr. Harley stated that all the preparations of conium were worthless except the succus; and that even doses of from three drachms to an ounce of this preparation were administered and considered not only safe, but absolutely necessary to produce any physiological effect. He had repeated some of Dr. Harley's experiments both on himself and others, and could fully confirm the accuracy of that gentleman's observations as to the largeness of the dose required. He had even found it necessary to administer larger doses, and had himself taken as much as an ounce and a half of the succus, procured from various London and provincial makers. He also commented upon the worthlessness of both the extract and tincture, having taken thirty grains of the former and an ounce of the latter at once, without any marked result. After briefly describing the physiological effects of a full dose of conium, and stating that it acted upon the motor centres of the brain and motor columns of the spinal cord, and that it did not appear to possess narcotic properties, although it caused disordered vision and staggering gait, Dr. Dodgson gave a short history of four cases of chorea which he had treated with the succus conii in doses of from six drachms to an ounce. In one of these the remedy was not persevered with; the remaining three improved rapidly under the treatment, and ultimately recovered, although two of them were intractable cases that had previously resisted the ordinary plan of treatment. He said that these cases tended to confirm Dr. Harley's opinion as to the value of conium in similar affections; but they were too few to be of much value, taken by themselves. They served, however, to show how large a dose of the succus conii was

* Abstract of a Paper read at a Meeting of the Cumberland and Westmorland Branch of the British Medical Association, at Keswick, on October 19th.

required, and also to point out the discrepancy between the dose recommended in text-books of materia medica, and even in the *British Pharmacopæia* itself (from thirty minims to a drachm), and that required in practice. This might in part be owing to faulty preparation, or to gathering the leaves of the plant at improper seasons. He believed that the so-called "succus" was sometimes prepared from dried leaves, which would doubtless explain its want of activity. Owing to the largeness of the dose of the succus, he had been led to try the active principle of the plant, conium. He had found it necessary to take half a minim of it to produce the full physiological effects, although he had been led to infer that a much smaller dose would suffice: possibly, the sample with which he experimented was not pure. As this alkaloid was soluble both in water and in alcohol, he recommended it to be used in preference to the officinal preparations by any one wishing to test the therapeutic value of conium.

ART. 124.—*Apomorphia*.

(*Medical Times and Gazette*, November 19.)

This curious organic base was discovered by the late Dr. Matthiessen and Mr. C. M. A. Wright, while experimenting in the laboratory of St. Bartholomew's Hospital, in April, and reported on to the Clinical Society by Dr. Gee, in May, 1869.* It is obtained by submitting the chloride of morphia for several hours to the action of strong hydrochloric acid at a high temperature. The result is the chloride of apomorphia, from which the base may be obtained without difficulty; but as it is very unstable, the salt has been used. Chemically the base, apomorphia, differs from morphia by containing the elements of a molecule of water less. Its chloride is a white crystalline powder, soluble in thirty parts of cold, and in much less of warm water. As a medicine it possesses most remarkable emetic powers, acting rapidly and certainly. Dr. Gee says, "We have never yet failed to produce vomiting when we wished to do so, and by a single dose." The salt is free from all local irritant properties, and can therefore be used hypodermically; its dose is very small—one-fifth of a grain by the mouth, or one-tenth of a grain hypodermically, acting rapidly and freely; and its action is not accompanied or followed by any ill effects. "The vomiting," Dr. Gee says, "seems, in most cases, to be critical, as it were, and put an end to itself; there is no consequent nausea." In illustration of its action, we quote a few of the examples mentioned by Dr. Gee. "A man brought drunk to the hospital by the police, injected with the one-tenth grain; he vomited in six minutes. Another drunken man, injected with one-fifth grain, vomited in three minutes. A drunken woman, injected with one-tenth grain, vomited in three minutes." In one or two instances, Dr. Gee reports, the circulation and the muscular power were depressed to a greater degree than could be accounted for by the vomiting, though not so much as to cause the least anxiety. A boy of nine was brought

* *Transactions of the Clinical Society*, vol. ii., 1869, p. 166.

to the hospital in a state of maniacal excitement from some undiscoverable cause. He was injected with one-tenth of a grain of the chloride. "In four minutes he became quite quiet; in seven minutes he vomited freely; was put to bed, slept soundly, and awoke next morning quite well." This suggests, as Dr. Gee observes, the question whether the drug may not, in larger or more frequent doses, be "a contra-stimulant, similar to bloodletting, antimony, and veratria."

Dr. Gee has not, so far as we are aware, given to the profession any further information on the use of this salt; and the only other notice of it that we have met with is a short communication from Dr. F. M. Pierce, who confirms Dr. Gee's statements. He says, "It is the most speedy and most certain emetic known—the tenth of a grain of the chloride, or even less, is the dose required. It may be given safely to children, and acts more rapidly when hypodermically administered," than when given by the mouth.

Should it turn out that the drug has no other medicinal value than as an emetic, it will be, we scarcely need say, a most important addition to our *materia medica*. No other emetic that we know of can be administered hypodermically; and all others are bulky in dose, very uncertain in action, and produce distressing nausea and depression.

ART. 125.—*On the Physiological and Therapeutical Actions of Conium and its Alkaloid.*

By MM. MARTIN DAMOURETTE and PELVET.

(*Gazette Médicale de Paris*, 37, 1870.)

"A. The local action of coniine upon the nervo-muscular elements consists in a short stage of excitation, revealed by pain and contraction of the muscular fibres, and afterwards in the special and characteristic effect of local cicutism—anæsthesia and akinesia. This doubly sedative action on the nervo-muscular system explains satisfactorily the local curative effects of coniine against the elements pain and spasm of disease, and authorizes the employment of hypodermic injections of coniine.

"A second local action, and one of much more importance, is that exercised by coniine upon the anatomical elements, which it alters, and even completely disorganizes, according to its degree of concentration. Thus it attacks and destroys epithelium, and changes profoundly the structure of the nervous and muscular elements; it scarcely modifies the connective tissue. This destruction of the histological elements, and this kind of direct changing action, which is exerted at the surfaces of elimination of medicinal agents, the skin and mucous membranes, as well as at the surfaces of entrance, explains the resolvent properties of preparations of coniine in dartrous affections, catarrhs and ulcers, whether herpetic, scrofulous, or syphilitic.

"Our experiments have proved that inferior organisms, in the same manner as anatomical elements, are influenced and destroyed by coniine.

Thence is evidently derived the well-known antiseptic and parasiticide properties of coniine and its alkaloid against putrid ulcers, itch, entozoa, &c.

“B. The diffused action of coniine consists in a double dynamic and alterative property exercised on the muscular system, the blood, and the less condensed anatomical elements.

“I. The excitability of the nerve centres is but little influenced by feeble poisonous doses, since these do not produce convulsions at first, since the voluntary and reflex movements persist until the end in the frog, and since cold-blooded animals succumb without any marked change of the intellectual and instinctive faculties.

“With strong doses there exists an undoubted increase of excitability of the motor centres, which is evidenced by tetanic movements and convulsive trembling, very apparent at first, and marked a little later by paralysis of the motor extremities of nerves, finally giving rise in birds to convulsive trembling at the time that the motor nerves are regaining their conducting power after the elimination of the poison. All our experiments, especially those practised on birds and mammalia, place beyond doubt this exaltation of the motor centres.

“II. The motor nerves probably undergo a slight excitation at first with strong doses, but the sole important phenomenon which they present is a paresis, and finally a paralysis, which is the most apparent characteristic of cicutism.

“The sensory nerves are much less affected than the motor nerves, because they are protected by their double sheath. In fact, the terminal extremities only of the motor nerves are affected during the short duration of the poisoning, as has also been made out with curare. But if the nerve tubes be influenced by very strong doses of the poison, either in direct contact or by its imbibition from neighbouring parts, they completely lose their excitability both in the sensory and in the motor tracts, even in cases where the microscope reveals no appreciable morbid change. Besides, one has seen the terminations of sensory nerves in the skin completely anæsthetized by the contact of coniine. These facts tend to establish the unity in properties of the sensory and motor nerves, their neurility, and to refute the idea of an elective action of coniine upon the motor nerves, which are not more powerfully affected at their extremities, we repeat, except that they cease here to be protected by their double sheath, and can consequently be more easily attacked by coniine in the plasma.

“This interpretation is justified by the fact that a much greater resistance is opposed to cicutism by the ganglionic motor nerves, the termination of which is different, for even when the striated muscles are completely paralysed, the smooth muscles are still in a state of spasm, because their nerves allow them to obey up to a more advanced period the increased excitability of the cord.

“Hence it results that cicutism creates a kind of antagonism between the motor centres and the nerves of movement by increasing the excitability of the former and destroying that of the latter; in this way may be explained the apparently paradoxical commingling of convulsions and paralysis in this poisoning, the acceleration of respiration at the commencement, its retardation and arrest at the end, as well as the

succession of contraction and dilatation of the pupil, &c. This antagonism exists in poisoning by other agents, as nicotine, atropine, &c.

"The therapist who never has recourse to doses likely to produce convulsions, utilizes the akinetic and anæsthetic properties of preparations of conium against affections of hyperkinesia and hyperæsthesia (tetanus, chorea, epilepsy, whooping-cough, neuralgia), and generally against the elements of spasm and pain in all maladies. It is important, however, to bear in mind that in medicinal doses the akinetic action is much more pronounced than the anæsthetic action, and that the latter is but an auxiliary to the former, at least when the agent is used locally, as in baths, ointments, plasters, hypodermic injections, &c.

"III. The muscular element is influenced much more than the nervous element by the diffusion of coniine. It is possible that the former may be excited at first, but this excitation may be disregarded as being very feeble and of short duration, whilst the amyæsthenia which is afterwards produced, to a certain extent concurs with the akinesia in engendering the same therapeutical result—the resolution of spasm.

"IV. The pupil is contracted with strong doses capable of augmenting the excitability of the spinal cord, and in the first instance when the oculo-motor nerve is not yet in a condition of paresis, and remains capable of carrying centric excitation to the constrictors of the pupil.

"Later on the pupil is dilated because the paresis of the extremities of the third pair no longer enables the sphincter of the iris to counteract the radiating fibres supplied by the filaments of the more slowly paralysed sympathetic nerve.

"Disturbances of accommodation are among the most constant results of cicutism, and may be explained, like the variations of the pupil, by the spasm or paralysis of the ciliary muscle, associated with either persistence or abolition of the functions of the third pair.

"V. The respiratory movements are accelerated during the period of spasm, when the motor nerves obey the increased excitability of the bulbo-spinal centre, and become slower as soon as the motor extremities are paralysed. At a later period they are arrested, and in the cold-blooded animal mark the precise instant of death, as is proved by the persistence of the movements of the heart, and by the nature of the cadaveric lesions.

"VI. The modifications of the cardiac movements, and of the vascular contraction, likewise find their interpretation in the relative condition of the over-excitability of the nervous centres and the paresis of the motor extremities of nerves.

"1. At the commencement of coniism strong doses determine palpitations, owing to the increased excitability of the bulbo-cervical portion of the cord, whence emerge the cardiac filaments of the sympathetic, but without marked acceleration of the strokes of the heart, since the vagi nerves receive the same stimulus from the bulbous centre.

"2. A little later paresis of the pneumogastric explains the acceleration of the beating of the heart, as the ganglionic nerves are slow in becoming paralysed, and so triumph for a time over the checking nerve.

But the contraction of the capillaries, which persists after the paresis of the vagi nerves, may augment the arterial tension to an extent sufficient for opposing the acceleration of the heart's movements.

"3. Very soon the ganglionic nerves are invaded by a commencing paralysis, and at the same time the muscular fibres, and probably the nervous centres. Then the movements of the heart are weakened, notwithstanding the relaxation of the capillaries and the diminution of the arterial tension, because the paresis of the cardiac filaments of the sympathetic proceeds side by side with that of the vaso-motors, and that thence the heart becomes powerless to supply to any extent the capillaries, the walls of which are weakened. It is at this period that the heart, freed from the dominant action of the intra-cardiac ganglionic centres, becomes intermittent.

"From what precedes, it results that the capillary network remains olighæmic during the whole duration of conium: at the commencement, in consequence of the excess of the activity of the vaso-motor nerves obeying the over-stimulated centres; at the termination, in consequence of the failing of the heart's activity at the time that the ganglionic nerves are invaded by the paralysis. It is only at the time of death that mechanical asphyxia substitutes for olighæmia a venous congestion of the viscera, which renders still more apparent the black aspect of the altered blood.

"This inertia of the capillary circulation is one of the causes of the lowering of temperature observed in animals under the influence of conium.

"It is not surprising then that therapeutists have thought of utilising the conium treatment against cardiac palpitations and fevers; but the profound impression which this agent produces on the whole of the nervo-muscular system, in association with the unfavourable clinical results of the first attempts, have led to its being reduced to an inferior rank among antipyretic remedies.

"VII. All the muscles of organic life are subjected, under the influence of coniine, to the same alternations of spasm and relaxation which have been observed in the whole muscular system of the economy. Thus, at the period of over-excitation of the cord, one may observe vomiting, frequent micturition, &c., which are contemporaneous with general convulsions, acceleration of the respiration, constriction of the pupil, palpitations, &c., and even continued beyond these symptoms; the ganglionic nerves resisting paralysis for a longer time than the encephalo-rachidian nerves.

"In the second period the smooth muscles of the digestive and urinary organs are relaxed, together with the muscles of the vessels, and posteriorly to the dilatation of the pupil and the paralysis of accommodation, and to the retardation of the respiration, and even when the paralysis of the voluntary muscles is far advanced. It should be mentioned, however, that the smooth muscles—upon which is concentrated the action of coniine by elimination, as those, for instance, at the respiratory surfaces—manifest at an early period, and to a much more marked degree, the relaxing effects of the preparations of conium. Thus it is that in spasm of the respiratory apparatus they have an opportunity for working beneficially.

“VIII. The genital depression attributed to conium by the ancients, if it be real, may be explained by the olighæmia of the afferent arterioles of the cavernous body, in the paralysis of the erector muscles, especially in that of the muscular fibres of the trabeculæ of the cavernous body; finally, in a certain degree of anæsthesia of the seminiferous canals, and probably in a diminished quantity of the spermatozoids. These notions are too doubtful at the present day to form a source of therapeutical indication. As much may be said concerning the influence of conium upon the activity of the mammary glands.

“IX. The most interesting point of our task is the alteration of the blood produced by coniine.

“No doubt can exist as to the destruction of the elements of blood by coniine introduced directly into this fluid by a wound, or through its penetration into neighbouring vessels, since this operation can be made out and followed under the microscope.

“At a distance from the point of injection in the principal vein of a limb, which has been the receptacle of the coniine absorbed by its extremities, the blood no longer presents any microscopical alteration, but differs from that of the corresponding vein by its physical characters: it is black and fluid, instead of being coagulated, as in the other veins. Then, in the absence of any change in the elements of the blood visible under the microscope, this black, fluid, and more or less oily aspect of the blood, will suffice for characterizing the alteration of this fluid. But this is precisely what has been observed in cases of poisoning by conium, and we ourselves have observed the changes in the menstrual blood of females undergoing a treatment by conium. There are different degrees of alteration in relation to the quantity of poison, but the sense of the action is the same and this action is constant.

“We do not hesitate then to conclude that coniine is a medicinal agent belonging to the group of *alteratives*. Whence it results that the blood affected by coniine is evidently less fitted for hæmatosis, and consequently for calorification, and the chemical transformations of nutrition either in their normal or in their pathological action. We have no objections to admitting that the treatment by coniine may arrest the formation and development of the various neoplasix by which are manifested the chief diatheses (dartre, rheumatism, scrofula, probably cancer). It does not even seem to us to be impossible that coniine may attack hyperplasix at an early stage of their formation, since we have seen it destroy such resistant anatomical elements as epithelial cells.

“These two combined actions will account for the undoubted success of preparations of conium, not only against the manifestations of scrofula, chronic rheumatism, dartre, syphilis, but also against tumours of a cancerous appearance. This last fact is a sufficient reason in our eyes for bidding the physician not to allow himself to be bound by the dogma of the incurability of cancer.”

ART. 126.—*On the Use of Arsenic in Certain Painful Affections of the Stomach and Bowels.*

By ARTHUR LEARED, M.D., M.R.I.A., Senior Physician to the Great Northern Hospital.

(*Medical Times and Gazette*, July 23.)

The following brief notes illustrate the utility of the treatment in cases in which the pain is increased by food, and also its effect in cases in which the intestines are affected:—

“A lady, forty years of age, who had met a reverse of fortune by the death of her husband two years previously, was sent to me by her medical attendant in January, 1869. I was informed by him that every ordinary means, including a milk and farinaceous diet, with entire abstinence from meat for eight months, had been exhausted in his attempts to relieve her sufferings. These consisted in constant pain in the gastric region, extending round the left side to the centre of the back. The pain was much aggravated by meals, especially by breakfast and tea, and at times it amounted to perfect agony. Vomiting frequently ensued, and then some relief of the pain was obtained. There was great flatulence, a sense of oppression in the stomach, and obstinate constipation. The patient, naturally of stout habit, had lost over 50 lbs. in weight. She was immediately put on the arsenical treatment, which was speedily followed by great improvement. This treatment was continued, and the dose gradually increased until the constitutional symptoms, which consisted in this instance of itching of the eyes, soreness of the soles of feet with a red rash upon their sides, ensued. By this time her cure may be said to have been complete; she rapidly gained flesh and strength, and has since remained well.

“The symptoms in this case resembled those of ulcer of the stomach, but the fact that a rigid milk and farinaceous diet increased rather than diminished them was opposed to this view.

“A gentleman, twenty-eight years of age, much engaged in commercial speculations, consulted me in the early part of the present year. He had been for a long period subject to a violent but dull pain in the umbilical region, coming on about two hours after meals. For the three previous weeks it had happened daily after breakfast, luncheon, and dinner. Liquids, even plain water, induced it more than solids. There was neither flatulence nor any other stomach disturbance, and the bowels were quite regular. Various plans of treatment had been found ineffectual. He had suffered from neuralgia in the left temple two years previously. Notable relief was afforded by the liquor arsenicalis after it had been taken only two days; it was continued altogether for about three weeks, when his eyes became affected. At this time the disease had quite subsided.

“The curative effects of arsenic,” Dr. Leared writes, “are most striking in severe cases of paroxysmal pain, and its success becomes doubtful in proportion as the case assimilates to those in which a lower degree of pain is traceable to the influence of food. In determining the question of the fitness of a case for the arsenical treatment, certain

circumstances may render essential aid. If the disease came on after some mental shock or severe trial, if the patient has previously unmistakably suffered from neuralgia, if he has lived in a marshy district, and especially if he has had hemicrania or ague, and if in addition to the occurrence of one or more of these circumstances the pain is paroxysmal, it will almost certainly yield to arsenic."

ART. 127.—*Arsenic in Irritative Dyspepsia.*

By J. C. THOROWGOOD, M.D.

(*The Practitioner* ; and *Edinburgh Medical Journal*, November.)

Dr. Thorowgood speaks highly of the action of arsenic in many diseases of the stomach. He has found that one-drop doses of Fowler's solution in half an ounce of infus. calumbæ had the effect, in a case he treated, to allay the pain, to stop the vomiting of the food, and to enable the patient to eat and digest small quantities of mutton. He states that the small irritable tongue, with projecting papillæ and yellow or grey fur, indicate arsenic. The more purely local the gastric symptoms, the better is the chance of arsenic doing good. When there is much general exhaustion of system, with disordered urine or hepatic congestion, it does not promise much.

ART. 128.—*On Nitrate of Silver in Conjunctivitis.*

By HENRY W. WILLIAMS, A.M., M.D., Ophthalmic Surgeon
to the City Hospital, Boston, U.S.A.

(*Guide to the Study of Diseases of the Eye.* Third Edition.)

Dr. Williams is very strongly prejudiced against the employment of nitrate of silver in any form of conjunctivitis, and considers the crayon of sulphate of copper a much superior application.

"The abuse of strong solutions of the nitrate of silver is another evil to which I feel bound to call attention. It is apparently considered by some a specific for all the ills which eyes are heir to—and is so lavishly employed that we not only observe, as results, a disagreeable olive stain of the conjunctiva, but, in some instances, destruction of the folds of this membrane and adhesions between the lid and the globe, where solutions approaching to saturation have been incautiously applied. It frequently aggravates the symptoms, and I can assert, as the result of many comparative trials, where the nitrate, in solutions of different strength, has been used for one eye, and solutions of the sulphate of zinc, with perhaps the crayon of sulphate of copper, for the other equally diseased eye of the same individual, that I have always found recovery slower in the eye to which the nitrate of silver was applied, and have often been compelled to abandon its use and substitute the treatment under which the other eye had already recovered. I do not say that the use of the nitrate of silver should be abandoned. It may be resorted

to with good effect in certain cases; but entire abstinence from its use, as an application inside the lids, for a long period in my own practice, has proved that it may be dispensed with without its want being felt, and I am glad to find the more recent authorities restricting its use within far narrower bounds than formerly. My desire is only to caution the young practitioner against too frequent use of this powerful stimulant, in cases where a mild astringent would better serve his purpose. It would be a gain for ophthalmic therapeutics if its use should become far less general; as even in cases where its application may be followed by recovery, the same result would equally have been attained had milder means been employed.

"The crayon of sulphate of copper is capable of replacing, with great advantage, the nitrate of silver, in most of the cases where this has been in favour; especially in the treatment of conjunctival inflammation and granulated lids. It does not, like the nitrate in substance or in strong solutions, act as a caustic, destroying the surface of the conjunctiva, but as a powerful astringent. To obtain good crayons, which is exceedingly important, it is almost essential to procure crystals from a laboratory or to recrystallize a quantity of the sulphate; as, when sent to market, the crystals are so much broken that it is difficult to find suitable pieces. The part to be selected is the hard portion, free from water of crystallization, near the apex of the crystal. This is to be carefully cut with a pocket-knife or sawn into the desired shape, which should be that of an ordinary crayon of large diameter. It may then be rendered as smooth as a piece of glass by rubbing with a wet rag, and fitted in a *porte caustique*. If the selection has been well made, the crayon will wear perfectly smooth, and if carefully wiped after each application may be used a great number of times, and for various patients, without danger; though, of course, as a precaution the physician should be provided with several if he has to employ them upon those whose diseases are highly contagious. It should usually be very lightly applied, over the whole surface of the conjunctiva of the everted upper lid. Too heavy a touch should be avoided, as, if clumsily used, it causes much more pain, and acts as an over-stimulus. Where the inflammation is intense, the pain from the first applications is sometimes considerable, but it is less than that produced by an equivalent strength of the solution of nitrate of silver; and as the patient becomes habituated to the remedy and the symptoms diminish in severity, the pain becomes trivial, even children disregarding it after the first few moments from its application, though they may have seemed to suffer very much when it is used for the first few times."

ART. 129.—*Local Applications to Burns.*

By A. D. BINKERD, M.D.

(*Philadelphia Medical and Surgical Reporter*, July 9, 1870.)

Dr. Binkerd prefers, as an application to burns when first seen, carbolic acid and glycerine, in the proportion of from five to ten drops of the former thoroughly incorporated with two ounces of the latter, spread

on with a camel's-hair or other light brush, then a layer of white cotton, over which a roller-bandage is neatly adjusted. For the suppuration following burns he recommends the following dressing:—Yellow wax, melted and strained, ℥j; raw linseed-oil, ℥iij; tannin, ℥j; subnitrate of bismuth, gr. xx. The wax must be first melted, the oil then added, and the whole stirred until incorporated; next, the tannin is added, and lastly the bismuth. The ointment should be applied on pieces of lint.

ART. 130.—*A New and Most Useful Eye-salve in "Granular Lids" and all Cases of Chronic Ophthalmia.*

By JOHN WILLIAMS, M.D.

(*Dublin Quarterly Journal*, August.)

After long experience Dr. Williams can speak most confidently of this ointment, for the composition of which he now publishes the following formula:—

R Arsenici sulphureti, gr. ij.
 Unguenti citrini, ℥ij.
 Axungiæ preparat. ℥ij. M.

In cases of granular lids, pannus, and obstinate chronic ophthalmia, the upper eyelid should be everted, and a piece the size of a hempseed be applied with a camel-hair pencil into the superior palpebral sinus.

ART. 131.—*The Use of Quinine in the Diseases of Childhood.*

By C. BING, M.D., Professor of Pharmacology in the University of Bonn, Germany.

(*American Journal of Obstetrics*; and *Medical Record*, July 15.)

Dr. Bing regards quinine as an important remedy in those diseases of childhood thought to be dependent on septic or zymotic conditions, like measles, scarlatina, and diphtheria. In scarlet fever, quinine should be given from the *very commencement* in sufficiently large doses, the progress of the disease carefully watched by the aid of the thermometer, and the doses increased in quantity if the fever grows threatening.

Of the acute exanthemata of infants, he would mention one particularly as being within the sphere of the influence of quinia, namely, *erysipelas neonatorum*. As a general rule, an internal dyscrasia, or an external putrid ulceration of the navel, is assumed as the cause of this fatal disease.

The action of quinine in this disease is attributed to the overcoming of the alteration of the blood, to the diminution of the high temperature, and to the direct removal of the histological causes producing the erysipelas.

In pertussis, quinine has answered his expectations. Three conditions are absolutely necessary if we desire any good results from it in whooping-

cough. It should be given in solution; the dose should not be too small, and should not be administered in a vehicle that will prevent it from coming in contact with the mucous membrane in its passage through the pharynx. The preparation should only be given when dissolved in muriatic acid, unless we are desirous of employing the alkaloid combined with that acid. Its constantly increasing price is a great obstacle which the physician often encounters in prescribing quinine extensively. This may be avoided by resorting to the amorphous chinine-chinoidine; and Prof. Bing states, in closing, that the preparation lately introduced into commerce by C. Zimmer, of Frankfort-on-the-Main, under the name of chininum muriaticum amorphum, cannot be too highly recommended.

ART. 132.—*On Sulphate of Quinine in the Treatment of Spontaneous Erysipelas of the Face.*

By Dr. PERROUD.

(*Annales de Dermatologie et de Syphilographie*, No. 4, 1870.)

The following conclusions are given at the end of M. Perroud's interesting article:—

"1. Sulphate of quinine administered in moderate and fractional doses promptly arrests the march of non-traumatic erysipelas of the face and removes it completely, in most instances on the second or third day of its administration.

"2. The effects of this medicinal agent are less evident in wandering erysipelas, and in those attacks which appear under the influence of constitutional states, as, for example, rheumatism.

"3. The researches of modern microscopists on the diffusion of leucocytes, lead one to think that it is through its opposition to this diffusion that sulphate of quinine acts upon erysipelas.

"4. It will be interesting to study clinically, as a means of controlling this hypothesis, the other substances which are, as experimentation has taught us, unfavourable to the diffusion of white blood corpuscles. I will reserve for a time an exposition of the researches which I have undertaken in this direction with perchloride of iron."

M. Perroud gives daily from thirty to forty centigrammes of quinine in a simple solution, of which a teaspoonful is to be taken every half-hour, so as to keep the patient under the persistent and prolonged influence of the remedy.

ART. 133.—*On Mercury in the Treatment of Syphilis.*

By M. GUBLER.

(*Gazette Médicale de Paris*, No. 28, 1870.)

The following remarks were made by M. Gubler at a sitting of the *Société de Thérapeutique*, March, 1870.

"I desire to-day to speak a few words on the treatment of syphilis.

In the first place, let me distinguish the acquired diathesis and the manifestations of the disease. The latter yield to mercury. One must close his eyes from the light to doubt for a single instant that mercury acts favourably against secondary and tertiary symptoms. But one finds that mercury is a powerless agent in contending against the diathesis, that persists, whatever one may do, and may expose the patient to numerous and often remote affections. I will cite two examples :—A woman was attacked by syphilis at the age of eighteen, and the disease lasted for twenty-three years. She was treated methodically by mercury. From time to time venereal symptoms presented themselves in the form of mucous patches on the tongue or general eruptions; I prescribed for these the proto-iodide, the manifestations disappeared to return again six months later.

“Another analogous instance: an Oriental had had syphilis for six years; I saw him after the diathesis had been well marked for five years; in spite of mercurial treatment relapses were frequent. Being unwilling to undertake the whole responsibility of the treatment, I consulted M. Ricord, who suspended the use of the mercurial preparations; the syphilis developed itself with greater rapidity, and necessitated a recurrence to the use of mercury; the symptoms disappeared but again relapsed: their cause, the diathesis, could not be removed, for its nature is to be indelible. I repeat the assertion that mercury, when the treatment is well directed, generally causes the disappearance of the symptoms, or rather it diminishes very much their severity. To pretend that the agent is powerless would be an unjust statement, but on the other hand, it would be a lure to think that it will destroy syphilis.

AR. 134.—*Bichloride of Mercury in the Treatment of Nervous Affections.*

By SAMUEL WILKS, M.D., F.R.S.

(*The Lancet*, June 4.)

A man, forty years of age, received, two months before his admission into Guy's Hospital, a severe blow upon the back of the head. This injury was followed by persistent and severe frontal cephalalgia, occasional temporary attacks of loss of consciousness, and, on one occasion, loss of power in the right arm. On admission, there was great nervous excitement and restlessness, and impairment of consciousness. These symptoms soon subsided on the administration of small doses of bichloride of mercury. The general nervous affection passed off, and left the patient in a good state of health, with the exception of the pain in the head, which still persisted. Dr. Wilks speaks favourably of the good results of preparations of mercury in cases of obscure nervous affections with much irritability and mental disturbance. A case of this kind was also alluded to, in which the failure of many other remedies was speedily followed by the successful administration of five-grain doses of grey powder.

ART. 135.—*On Blistering in Urgent Cases.*

By the late J. H. JAMES, F.R.C.S.

(Chloroform versus Pain. London, pp. 62.)

The following practical hint is given in Mr. James's pamphlet:—

"A boiling water blister may afford a most powerful, ready, and useful stimulus to the nervous system. A basin, say half-a-pint, should be filled with flannel, hastily pressed in, and boiling water poured upon it to saturation; a plate or large saucer should be applied to its top, and, being inserted, the superfluous water can be forced out of it, the saucer removed and the basin pressed upon the chest or elsewhere; a soft towel round the edge guarding the neighbouring parts—of course, it must not remain on long."

ART. 136.—*A Defence of Counter-irritation.**

By ALEXANDER DAVIDSON, M.A., M.B.

(Liverpool Medical and Surgical Reports, October.)

After some introductory remarks on the tendency of reformers in medicine to err by becoming extreme (this point being illustrated at some length from the history of ancient medicine, and the more recent changes in medical practice), the proper subject of the paper was taken up—viz., the attack recently made by Drs. Dickinson and Anstie on the old practice of using counter-irritants, and other external remedies, in the treatment of diseases of internal organs. This opposition has been made, not to the use of counter-irritants where applied directly to the diseased part, but only where these applications are made to parts not having any immediate connexion with the seat of disease—as, for example, a blister on the skin of the chest in pneumonia, &c. Such treatment is objected to, not only as wrong in practice, but also as quite absurd in theory, there being no possible way of explaining how any remedy applied to the skin, can affect the subjacent internal organs unless it be of such magnitude as to influence the whole body. This, then, being the nature of the objections made by Drs. Anstie and Dickinson, the object of the paper was explained to be, not so much a vindication of the prevalent ordinary practice of the present day in the use of counter-irritants, &c., in the cases referred to (the fact being that there *is* some need for reform in that practice), but rather to defend the *theory*, by showing the possibility of the effect of remedies applied to the skin being conveyed to contiguous internal organs. The channel by which such a therapeutic influence is conveyed, is most probably the nervous system. The old theory of counter-irritation drawing away blood from the diseased organ to the surface is indefensible, but the view that disease can be modified by influences acting through the nervous system is quite consistent with our knowledge of the dependence

* Abstract of a Paper read at a Meeting of the Liverpool Medical Association, Session 1869-70.

of the healthy processes of circulation and nutrition on the nerves. Dr. Dickinson states, that the facts of pathology show that influences conveyed by the nervous system from the skin to internal organs are only injurious; but this objection is not material to the point. It is more important to inquire whether any pathological evidence exists of disease of the skin affecting secondarily the contiguous internal organs, as this would indicate a connexion between the two parts; several instances of this nature may be found, such as the fact that erysipelas of the scalp most frequently gives rise to inflammation of the arachnoid and pia mater, and that burns of the chest are so often followed by inflammation of the lungs. It is highly probable that similar evidence may also be obtained from anatomical and physiological considerations, especially from the history of development, but want of time prevented entering on this investigation. As to the therapeutical evidence on this matter, it is as strong as such evidence can be; and its apparent strength is not denied by Drs. Dickinson and Austie. The consideration of this evidence, and the practical rules for the proper use of this kind of treatment, may well form the subject of a separate communication to the Society.

ART. 137.—*On the Use of Vinum Aloes in Ulceration.*

By HENRY FREDERICK NATHAN, Senior Assistant-Surgeon
of the Royal Naval Hospital, Haslar.

(*Medical Times and Gazette*, November 12.)

A most valuable remedy for any kind of ulcer which has once assumed the aspect known as "healthy," and also for weak ulcers, exists in the wine of aloes of the Pharmacopœia. It is almost superfluous to mention that the use of wine as an application to ulcers is of very ancient date, the fact being well known. It is highly extolled by Galen, in his "Methodi Medendi," Lib. 3; Hippocrates, in his discourse "*Περὶ Ἐλκωρ*," frequently alludes to it; in our Saviour's parable of the good Samaritan, he is represented as pouring into the injured man's wounds oil and wine; while, more recently, Dr. Hosack, an American author, bears testimony as to the local application of wine. With regard to aloes, it is mentioned by Aëtius as a stimulant when applied externally to tardy ulcers; Rhases employed aloes in the treatment of sores, as did also the Æginetan Paulus. Lately also, M. Delioux (*Bull. de Thérap.*, vol. lxvi.) recommends the tincture of aloes in the treatment of wounds as based on veterinary practice. The good effect of the vinum aloes must not be ascribed only to the stimulating properties of the wine—that the aloes has also a share in it may be proved by dressing two ulcers of the same character, occurring in the same person, the one with wine, the other with wine of aloes, when the latter will be found greatly superior. The preparation should be applied on lint covered with oil silk, and each dressing should be permitted to remain on for twenty-four hours; its primary effect is to increase the discharge, which may be gently sponged from the surrounding integument, taking care never to

touch the surface of the ulcer; and during the healing process no other applications should be employed.

Mr. Nathan has made use of this method of treatment in some hundreds of cases with marked success, and it has almost invariably produced rapid cicatrization, in cases where most of the ordinary applications have either been very tardy in their effects, or else have failed.

ART. 138.—*The Beneficial Effects of Combining Tonics with Aperients in Obstinate Constipation.**

By the Rev. DAVID BELL, M.D., Goole.

(*British Medical Journal*, September 14.)

The author said that, during the time when he was in practice as a physician, he had met with many cases of irregular and slow action of the bowels with prolonged constipation. In these cases, ordinary aperients or purgatives, if taken in sufficient quantity to act, generally overacted and caused depression, and also appeared to leave the bowels weakened. He had therefore tried various combinations, and had come to the conclusion that the best formula was the following:—℞ Aloes socotrinæ, extracti hyoscyami, āā gr. xij; quinae disulphatis, gr. vj; ferri sulphatis, gr. iv. To be well mixed, and divided into twelve pills. One of these pills should be taken in the afternoon, between four and six o'clock; it will produce on the next day, between ten and twelve, relief from the bowels without any pain. Dr. Bell had found these pills to produce uniformly good results without inconvenience.

ART. 139.—*On the Employment of Creasote in the Treatment of Typhoid Fever.†*

By M. MORACHE.

(*Gazette Hebdomadaire*, No. 25, 1870.)

“1. Typhoid fever seems to be due to the introduction of a virus into the organism, the mode of action of which is, without doubt, the evolution of a ferment.

“2. Creasote probably acts upon this fermentation, as one may make out in ordinary direct experiments, by modifying, if not by annulling, that morbid process.

“3. In default of more direct proofs, this action is evidenced by—

“*a.* Diminution of the intensity of the fever.

“*b.* Diminution of the duration of the febrile period.

“*c.* Diminution of the general and local typhoid symptoms.

“*d.* Local action upon the digestive mucous membrane.

* Abstract of a paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-upon-Tyne, August, 1870.

† Communicated to the Académie des Sciences.

"4. Creasote ought apparently to be preferred to carbolic acid, which agent seems not to have given the same very satisfactory results, and cannot be always easily tolerated.

"5. It seems logical to attempt the creasote treatment in other infectious maladies having an evolution analogous to typhoid fever—as, for example, variola.

"6. Although the action of creasote may be accepted in the treatment of an infectious disorder due to an organic fermentation, nothing authorizes us in attributing to it a preservative action."

ART. 140.—*Veratrum Viride in Dysentery.*

By A. M. RAGLAND, M.D., of Shelbyville, Texas.

(*The Medical Archives*; and *The Medical Record*, July 15.)

Dr. Ragland advocates veratrum viride in dysentery, and alludes to a case of a boy, æt. six, who, when first seen, had from thirty to forty evacuations in twenty-four hours; pulse rapid, small, and wiry, numbering 130 per minute, and the temperature, as indicated by the thermometer in the axilla, 103·5° F. Wishing to reduce the too rapid action of the heart, he gave veratrum viride, commencing with three drops of Norwood's tincture, and increasing one drop each dose, which in six hours brought the pulse from 135 to 60 or 70 beats, and in corresponding ratio the temperature was found to have fallen to 101° F.

The marked benefit of the treatment was shortly manifested in the lessened number of evacuations and reappearance in them of fecal matter. The child made a good recovery, convalescing steadily from the time of the favourable change.

Did the veratrum's remedial influence act directly upon the disease-process, arresting the molecular disintegration which was going on, and the development and elimination of preternatural heat, by controlling the destructive metamorphoses caused by the action of the disease poison upon the tissues?

ART. 141.—*On the Application of the Laryngoscope.*

By J. M. DA COSTA, M.D.

(*Medical Diagnosis, with Special Reference to Practical Medicine*, 3rd ed. revised, pp. 844. Philadelphia.)

The subjoined opinions are entitled to consideration:—

"In some persons with very irritable throats, I have obtained good views by pressing the instrument against the roof of the mouth, instead of passing it back in the pharynx, and by altering the position of the head a little, tilting it more backward. The epiglottis, and the structures at the entrance to the windpipe, are thus readily enough brought into view; with the deeper parts we do not succeed so well. But in many cases we get sufficient guide for topical applications.

"There are some further obstacles, such as rising up of the tongue,

greatly enlarged tonsils, a very long uvula or a pendent epiglottis, all of which at times seriously interfere with our investigations. But in any case we should not endeavour to make the view more satisfactory by constantly altering the position of the mirror. It is always better to introduce it repeatedly, than to shift it often when introduced, or to keep it for any length of time in the patient's mouth."

ART. 142.—*Epileptic Chorea of the Right Arm.**

By THOMAS LAYCOCK, M.D.

(*British Medical Journal*, September 24.)

The President, referring to cases of epileptic patients, observed that the administration of bromide of potassium had been attended with great advantage in checking the disease and causing sleep. In some cases, however, it lowered the temperature and depressed the system injuriously, besides producing an eruption on the face and shoulders. He mentioned the case of a lady who had had this eruption of her skin in consequence of the continued use of bromide of potassium, which otherwise had been exceedingly effective in checking the epilepsy and causing sleep. It was then discontinued, and a general treatment adopted. The eruption disappeared, and strength was restored, while at the same time the good effects remained. He related the following case:—

J. C., a domestic servant, aged thirty-nine, was admitted into the Edinburgh Royal Infirmary on May 27th. Her memory was very defective, so that no clear account of her family history could be obtained. Eighteen months before admission, she began, without any known cause, to have fits, the number of which varied from one to three or four in a day. The fits lasted about three minutes; during each fit she was unconscious, and there was a slight convulsive movement of the right hand and arm, with jerking of the head. She came into hospital in consequence of having scalded her feet during one of the fits, and remained in the surgical wards under Dr. Gillespie for five weeks; after which she was transferred to the medical wards. The fits continued to occur, and appear to consist of clonic spasms of the right arm and hand, which were jerked up and down: the head was also jerked from side to side; and the mouth was opened and shut, but she did not bite her tongue. No other part of the body seemed to be affected. Her general health appeared very good. From May 29th to June 21st, she took valerianate of zinc, but without benefit. Iodide and bromide of potassium were then given in doses of five grains each in infusion of quassia. Under this treatment, the fits diminished; and on July 29th she was discharged greatly improved—there having been no recurrence of fits since the 13th.

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association at Newcastle-upon-Tyne, August.

ART. 143.—*Syphilitic Insanity*.*

By H. GRAINGER STEWART, M.D.

(British Medical Journal, September 24.)

Dr. H. G. Stewart read histories of the cases of three patients in the Newcastle Borough Asylum, which presented the following characters in common:—1. They all occurred in subjects who had suffered from syphilis. 2. All the patients had similar delusions: they believed themselves the victims of conspiracy, persecution, and undeserved cruelty. 3. They all had hallucinations of touch, hearing, and sight. 4. They were all suicidal: two of them had made actual attempts on their own lives. 5. They were all dangerous to others when under the influence of their delusions, and were quite unfit to be at large. 6. They were all worst at night; which might point to the syphilitic nature of their disease. 7. They all suffered severely from cephalalgia. 8. Treatment produced but little effect. The disease was probably incurable; but still, by the relief of symptoms, much of the distressing character of the disease might be assuaged.

ART. 144.—*The Use of the Thermometer in the Diagnosis and Treatment of Insanity*.*

By T. S. CLOUSTON, M.D.

(British Medical Journal, September 24.)

As the result of observing the temperature of the body in five hundred and eighty cases of various forms of insanity, very great importance is attached to the use of the thermometer; and it has been established as a regular part of the examination of every case admitted into the Carlisle Asylum, that the morning and evening temperature should be taken and recorded. The unerring accuracy of the instrument, and the feeling that its indications are in no degree dependent on one's sensations or judgment at the time, soon make one trust very greatly to it. Its regular use shows that the temperature of the insane rises from two causes—1, inflammatory affections; 2, disturbances in the action of the central nervous ganglia. It is the second class of causes that should be studied and observed carefully. The difference in the temperature of a patient when quiescent or depressed, and again when he labours under acute excitement, is sometimes as much as 5·8 degrees. The temperature of the body in the insane is higher than in the sane. The most marked characteristic of the temperature of the insane, however, is the rising of the evening temperature, which in the mildest forms of insanity is much higher than in health, and in general paralysis is as much higher than the morning temperature as in health it should be lower. This rising of the evening temperature is found to bear a definite and striking

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association at Newcastle-upon-Tyne, August.

relation to the rate of mortality in the class of the insane among whom it exists, gradually rising as the mortality rises, from mild dementia to general paralysis. Thermometrical observations are not only important as regards classes of the insane, but equally or more so as regards individual cases. As a general rule, the temperature seldom rises above 100 or 101 degrees from functional disturbances in the brain. Such a rise in temperature sometimes precedes an attack of acute excitement, enabling its occurrence to be predicted. Such rises in temperature are not certain in their significance, but are most reliable so far as they go. Thermometrical observations are most valuable as giving indications for treatment. Any drug which has the effect of bringing the temperature in the direction of health may generally be considered to be indicated. In certain cases, opium tends to raise an already abnormally high temperature; while bromide of potassium, alone or in combination with *cannabis Indica*, will reduce it. One kind of puerperal insanity is associated with chronic inflammation of the uterus. This is shown by the use of the thermometer. A blister over the womb almost certainly abates the maniacal excitement. General paralysis, in its early stages, can often, too, be diagnosed from simple acute mania by the increase in the evening temperature. This instrument is of very great value, too, in making known the existence of the beginning of pneumonia, or pleurisy, or phthisis; or in revealing the presence of injuries in maniacal patients in whom the sensation of pain is blunted. Valuable indications as to the giving of diet, tonics, and stimulants, may be got from the use of the instrument. A high temperature does not at all contraindicate stimulants. On the contrary, a stimulant such as whisky will be followed in such cases by a fall in temperature of a degree or more in many cases. The whole tendency of the use of such an instrument is to give an approach to definiteness and scientific accuracy to the treatment of insanity.

ART. 145.—*Table for the Examination of Urinary Calculi.*

By J. CAMPBELL BROWN, D. Sc. London, Lecturer on Chemistry and Toxicology at the Royal Infirmary School of Medicine.

(*Liverpool Medical and Surgical Reports*, October.)

1. Heat a portion of the powdered calculus upon platinum foil.
 - Destroyed. (a) *Uric acid* : *Ammonic urate* : *Cystine* : *Cholesterin* : *Bile-pigment*.
 - (b) *Uric acid* from *Calcic and Sodid urates*. *Ammonia* from *Triple Phosphate*. *Oxalic acid* from *Calcic oxalate*.
 - Not Destroyed. (c) *Calcic Phosphate* : *Calcic Carbonate*.
 - (d) *Calcic Carbonate* from *Calcic Oxalate and Urate*. *Sodic Carbonate* from *Sodic Urate*. *Magnesian Phosphate* from *Triple Phosphate*.

If it chars and gives odour of burnt feathers, add to another portion a drop of concentrated nitric acid and evaporate to dryness : pink colour ; cool, and add ammonia : purple colour ; *Uric acid* or *Urates*. If the

odour is peculiarly disagreeable, resembling carbonic bisulphide, dissolve in ammonia, and allow the solution to evaporate spontaneously; microscopic six-sided plates indicate *Cystine*. Mix another portion with lime, ammonia may be evolved from the *Urate* or *Triple Phosphate*.

2. Ignite another portion in the blowpipe flame until it burns entirely away (Class (*a*), see above), or leaves a white residue. If it fuses, it consists of the mixed *Phosphate of Calcium, Magnesium, and Ammonium*. Place a portion of the residue on red litmus-paper and moisten with a drop of water; alkaline reaction indicates *Soda* or *Lime* from Class (*d*) or from *Calcic Carbonate*. Dissolve the rest of the residue in water and filter. If the filtrate is alkaline, add a drop of hydrochloric acid and evaporate cautiously to dryness; microscopical cubical crystals proves the presence of *Sodium*. Dissolve the residue, insoluble in water, with hydrochloric acid, observing whether or not any effervescence due to carbonic acid takes place; add a comparatively large quantity of ammonic nitro-molybdate, and heat; a yellow precipitate indicates *Phosphoric Acid*.

3. Boil a portion of the powdered calculus in dilute hydrochloric acid; effervescence indicates calcic carbonate; filter; neutralize the solution by ammonia, and add acetic acid in excess; a turbidity indicates *Calcic Oxalate*. To the clear solution (or the filtrate if calcic oxalate is present) add ammonic oxalate; a precipitate indicates *Calcium, which was not previously in the state of oxalate*; filter, if necessary; add ammonia, and stir; a white crystalline precipitate indicates *Magnesian Phosphate*.

4. Biliary Calculi. *Cholesterin* is soluble in boiling alcohol, in ether, or in benzole; and, upon the spontaneous evaporation of the solution, is deposited in rhombic nacreous laminæ, which polarize light.

Bile pigment is insoluble in ether; soluble in potassic hydrate, and, when treated with nitric acid, becomes first green, then blue, passing into violet, red, and yellow.

ART. 146.—*On the Action of Belladonna in Arresting Nocturnal Incontinence of Urine.*

By J. BURNEY YEO, M.B., Assistant-Physician to
King's College Hospital.

(*The Lancet*, October 22.)

The conditions which give rise to this distressing symptom are most commonly observed in young children; but the cases which form the subjects of the following remarks were persons who had reached the age of puberty, and this circumstance, Mr. Yeo writes, has enabled us to analyse the mode of action of the remedy in a manner which would have been difficult with younger patients.

The first case was that of a young man, sixteen years of age, an apprentice as a compositor, who became an out-patient at the hospital about two months ago, complaining of nocturnal incontinence of urine. He was a thin, delicate-looking boy, with a hectic flush on his face; and he manifested in a marked degree that *shamefacedness* and mental distress which so embarrassing an infirmity may well produce. The

accident happened every night, and had persisted ever since his infancy. He was ordered to take five minims of the tincture of belladonna, with ten minims of the tincture of the perchloride of iron, three times a day, and to avoid drinking any fluid for some hours before bedtime. After taking this prescription for a week, he reported himself as only slightly better; he had passed urine in bed three or four times since he had taken the medicine. He was ordered to take ten minims of the belladonna tincture instead of five. This reduced the frequency of the accident to first once in seven days; then once in about fourteen days; and, on increasing the dose to fifteen minims, once in three weeks. With the latter dose he took no steel, as his general condition had improved marvellously. There had been, so far, little or no alteration in the dimensions of the pupils, and vision had been in no wise interfered with; but on the recurrence of a slightly increased frequency of the incontinence, he was ordered twenty minims of the tincture of belladonna three times a day. The nocturnal incontinence now completely ceased, but the vision became so indistinct that he could not "read his copy." He was therefore ordered to take only one dose of twenty minims in the twenty-four hours, and that at bedtime. He continues quite free from a return of the complaint. This patient had never suffered from an irritability of the bladder by day, and had no occasion to pass water more frequently than other people.

The next case was that of a girl, also between sixteen and seventeen years of age, who had similarly suffered ever since her infancy from nocturnal incontinence of urine. She came to King's College Hospital as an out-patient on 5th March last, and at that time she was nightly passing her urine in bed. She was living in the country, and was a fresh-looking, healthy, and robust young woman; but her mental distress and embarrassment were extreme. The wretched malady unfitted her for going into service, might be justly regarded as an impediment to marriage, and altogether made her life a misery. She was put on the same kind of treatment as the preceding case, except that she at once commenced taking ten minims of the tincture of belladonna, thrice daily, and she was ordered no steel, as her general condition was good. For the first week little or no improvement was manifested; the dose of belladonna was therefore increased to fifteen minims, which dose she has continued to take ever since. The incontinence rapidly abated, and now scarcely ever occurs. Her appearance and manner have at the same time undergone an entire change; a bright and cheerful aspect has replaced a taciturn, morose, and discontented mien. She has, for nearly a month, been engaged in a situation as a domestic servant, for which she voluntarily applied. Here, then, is a remarkable instance where the whole course and prospects of a life have been rapidly changed by the administration of a few minims of a vegetable tincture!

Let us now inquire, What is the pathological condition which in these cases gave rise to this symptom; and in what manner has the belladonna acted in overcoming it? Mr. Yeo apprehends that a weakness or atony of the sphincter muscle of the bladder was at the root of the evil in each case. There was no irritability of the bladder leading to the frequent micturition by day in either case, nor was there any abnormal condition of the urinary excretion.

We know that the involuntary action of the sphincters can be supplemented and strengthened, when necessary, by voluntary effort. It is therefore probable that, during the waking hours, a very slight amount of voluntary effort is superadded to the involuntary contraction of the sphincter vesicæ, and the urine is thus prevented from escaping from the bladder. But during sleep this voluntary effort is in abeyance, and so soon as the accumulation of urine becomes sufficient to stimulate the detrusor fibres to contraction, the weak sphincter gives way, and the bladder is evacuated in bed. Mr. Yeo imagines that the belladonna, acting it may be through the sympathetic nerve fibres, strengthens the involuntary efforts of the sphincter fibres at the neck of the bladder, and thus prevents the nocturnal incontinence. In each of the cases reported there was the additional difficulty in treating them, that an inveterate habit had to be overcome.

Mr. Yeo concludes that the efficacy of belladonna in relieving nocturnal incontinence of urine is owing to its influence in giving tone to the weaker sphincter vesicæ. This observation is in harmony with the statements which have recently been made as to the action of belladonna as an aperient by promoting the peristaltic contractions of the involuntary muscular fibres of the intestinal canal.

ART. 147.—*On the Influence of Section of the Cervical Pneumogastrics upon the Action of Emetics and Cathartics.*

By HORATIO C. WOOD, Jun., M.D., Professor of Botany
in the University of Pennsylvania.

(*American Journal of the Medical Sciences*, July.)

After detailing fifty-one experiments on animals, Dr. Wood gives us his results as follows:—First. The division of the cervical pneumogastric does, in the majority of instances, but not always, absolutely arrest gastro-intestinal secretion, emetics and cathartics being absolutely powerless to produce it. Second. That this arrest is not due to any direct influence which the nerve has upon the intestine or its circulation, but is owing to two or three causes: accumulation of carbonic acid in the blood, interference with the circulation of the lungs backing up the blood upon the portal circulation, and perhaps shock.

These things being granted, the opposite results obtained by Brodie and Reid are explainable. It is well known that in a small proportion of cases division of the nerves does not induce the changes in the lungs ordinarily so fatal. In such instances there is no great accumulation of carbonic acid in the blood, nor is there any backing up of the blood in the pulmonary artery, and consequently upon the right heart, and finally portal circulation.

The secondary results of section of the par vagum—the actual causes of the arrest of gastro-intestinal secretion—are therefore wanting in these cases; and he believes it to be in such that emetics and cathartics act freely after division of the nerves. The rarity of such cases is the reason why those experiments are proportionately so few in which such drugs act in their ordinary manner after the operation.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

ART. 148.—*Clinical Lectures on some Stray Subjects of Hospital Surgery.*

By FREDERICK C. SKEY, C.B., F.R.S., Consulting Surgeon
to St. Bartholomew's Hospital, &c.

(*The Lancet*, July 23 and 30; August 20 and 27; September 17 and 24;
and November 5.)

Abscess in different localities.—All abscesses occurring spontaneously, or rather without external and obvious causes, Mr. Skey says demand treatment by tonics and stimulants, and of such he selects especially bark and wine. There is no remedy in the Pharmacopœia so potent in producing suppurative action as bark, and of all forms the simple tincture is the most efficient, in full doses of two or three drachms diluted with water. By the term suppurative action, Mr. Skey understands the conversion or breaking down of a mass of lymph, itself quite incapable of removal by the absorbents, into fluid pus—in fact, into abscess.

There is no form of abscess more illustrative of these truths than the disease when situated in the mammary gland. It appears in weakly constitutions following long and severe confinements with loss of blood, or a low and innutritious diet, erroneously supposed to act as a preventive to inflammation, which, in truth, it actually fosters.

Mr. Skey assures us that we have no means within the circle of our present knowledge of obtaining the absorption of this solid mass or throwing it back on the constitution. Neither iodine, nor leeches, nor fomentations, nor purgatives, or other supposed remedies confidently proposed by young medical men, who, unfortunately, observe little and think less, are at all available to good. Yet they are the agents which two-thirds of us at least would resort to.

The proportion of the deposit that may be absorbed depends on the stage it has arrived at. If much advanced it will pass on almost entirely into suppuration. It has already entered on that of suppurative action; it will not remain stationary, and it must advance; but whether its progress towards its necessary consummation be slow or rapid, depends on the treatment. Mr. Skey says in all abscess give bark freely, and generally wine; and the larger quantity of each that the patient can bear, the earlier will this solid mass break down in the centre and form a large abscess, which when matured, and not before, should be freely

laid open with the knife. If the deposit be recent, and the disease treated early on this sound principle, a portion of the mass will be taken up by the absorbents, indicated by the disproportionate quantity of pus to the large mass that has produced it.

Perineal abscess often presents itself in the form of a small rounded, hard tumour, by the side of the urethra in the perineum, of about the size of a marble. Whatever we may suppose, or have been told to the contrary, it will answer, in Mr. Skey's opinion, no useful purpose to adopt, in this form, any other treatment except that he has recommended in the case of mammary abscess. Mr. Skey does not consider it at all necessary to the true pathology of this disease that it should be based on any lesion of the urethra. It is not necessarily, nor by any means invariably, the result of urine infiltrated into the cellular tissue. It results from irritation conveyed to this tissue by the use or abuse of instruments employed in the treatment of stricture, real or supposed. When pus is thoroughly formed—and it is a great object of treatment to attain this end as early as possible—do not open the canal of the urethra, if urine does not pass through the wound. Should it do so there would appear to be even less necessity for this extension of the incision.

It is not always an easy diagnosis to determine whether fluid about the *knee-joint* is within the cavity of the articulation or without it. As a rule the diagnosis is readily attained in these cases. It is said that when the fluid extends over the patella, the disease consists of abscess around the joint; and when the patella is raised, and is pushed up by fluid underneath it, the collection is within the articulation. That is all very true. But in many cases the fluid, although confined to the joint, is not sufficient in quantity to raise the patella, and therefore we cannot always depend on that particular evidence; and in the other case, in which, consequent on the greater tenacity and closer adhesion of the integuments to the fibrous tissue upon the patella, Mr. Skey has seen several examples of what he has called the horse-shoe abscess around the knee—viz., when the matter has travelled round three sides of the patella without extending over it. Such cases are very deceptive. In forming an opinion—and a correct judgment is often indispensable to the recovery of the patient—we would, of course, place our greatest reliance on the local examination by the hand, and, this proving insufficient, weigh deliberately the evidence in favour of one or the other locality. If the fluid be in the joint, it may be a more serious affection, and the constitution takes cognisance of it as such. If external, probably the formation of abscess has been preceded by some local injury of a superficial kind, involving the cellular tissue, and in which the condition of the skin itself may add its testimony.

Mr. Skey next speaks of abscess on a larger scale. *Abdominal abscess* presents itself in the form of a large tumour, occupying the lower part of the abdominal walls, and commonly extending from the ilium towards the mesial line of the abdomen. The size is sometimes immense. It is firm, solid, and unyielding on pressure, but not very painful. Mr. Skey has known it on several occasions to be mistaken for malignant disease. It will remain stationary for a long period, and when it breaks down into pus, the fluid will extend in various directions, backwards towards the loins, almost invariably along the course of the femoral vessels to

the extent of four or six inches; while it occasionally breaks its way through the sacro-ischiatic foramen, and forms an immense tumour on the gluteal region. This disease may be said to place life itself in jeopardy, not merely from its magnitude, but from the depressed condition of the system that produces it. In this feature it resembles carbuncle. Mr. Skey states briefly some few particulars of the first case he ever saw. It occurred to a gentleman of advancing age, who first detected the disease while on a journey in Wales. He consulted a surgeon, who reported to his family that his disease was malignant. He consulted a second authority in the west of England, who echoed the opinion of the former gentleman, and advised his immediate return to London. Mr. Skey saw him in consultation with his friend, the late Dr. Rigby, on the day following. Other medical men were present. Mr. Skey's reason for entertaining a doubt as to the malignant nature of the disease was based on the fact of its very recent appearance, which seemed to him fatal to the supposition of malignancy. He considered it a prospective abscess, and he gave him bark and good nourishing diet, with wine. In the course of ten days the swelling increased largely, and Mr. Skey thought he felt fluctuation. In the presence of several medical men, and in the confidence of his opinion, Mr. Skey punctured the tumour through the abdominal wall; nothing but blood followed the puncture! He then ordered brandy in place of wine, and turtle soup, and a thoroughly animal diet. In four days Mr. Skey again punctured freely, and evacuated about eighteen ounces of healthy pus. The patient recovered in a month.

Housemaid's knee.—“Enlarged bursæ on the patella, known as the *Housemaid's knee*, is a very common affection, and is productive of great discomfort and inconvenience to its possessor. It is not caused by direct pressure, but, like corns, bunions, and blisters on the hand, &c., it results from oblique traction of the skin in moving from side to side; in fact, from friction. Corns are not limited to people who wear tight boots. These bursæ assume various forms and sizes, from that of a child's ball to that of an orange. They are soft or hard—that is, the bursal cavity may be filled with a serous fluid, or the cavity may be all but obliterated by a thick, fleshy mass of lymph, which forms the body of the tumour. The former are the more common, but both are to be met with, whether in hospital or in private practice. Now what is the treatment you would adopt for the cure? I will tell you. You begin with tincture of iodine—iodine the universal, and, I would add, the worthless. In truth, iodine, as a local remedy in all cases of this description, is almost, if not quite, inoperative to either good or evil. Can any one of you, gentlemen, assure me you have ever seen the smallest advantage derived from it in the treatment of bursæ? If you have, I have not. The next remedy recommended is the repeated application of blisters. I have seen cases in which blisters have been applied to the extent of some eight or ten without benefit, and, indeed, one does not see why they should prove useful in removing either the fluid contents of a bursa or the mass of lymph deposited around it. You will find a stout thread of silk passed through the centre of the tumour far more efficacious than either the iodine or the blisters. To remove these swellings by excision is to return to the bar-

barous surgery of our forefathers, and you will not do that operation with impunity. It is an operation of expediency, and is not unattended with danger. The effect of the seton thread is to convert the entire mass into an abscess, and this end is generally attained in the course of a week or ten days. Inflammation will follow of a somewhat severe character, if the thread be allowed to remain in the wound after the exudation of pus from the two orifices made by the needle. The cases therefore require a surgical eye upon them daily after a few days have elapsed. It is now an abscess; it was a bursa; and the abscess, when matured, should be opened freely. I have repeatedly seen the hard mass of the disease deposit entirely absorbed without suppuration.

Ranula consists in a collection of glairy, albuminous fluid within a cyst formed under the tongue, varying in size from that of a cherry-stone to that of an orange. It is by some authorities considered to be a dilated orifice of a sublingual duct, or of that of the submaxillary gland; by others, that it is a formation independent of these natural orifices. I incline to the former pathology, from the fact of my having extracted a small calculus from the orifice of a duct in a case of ranula, on the removal of which the disease underwent a spontaneous cure. When small, and, it may be presumed, in its early stage, the membranous cyst is thin—has the appearance of translucency, and is marked by minute veins coursing over it from below upwards. When at the greatest magnitude I have ever seen it, its cyst is thick and fleshy, and it extends from below the floor of the mouth downwards to the level of the cricoid cartilage, forming a large tumour, palpable to sight as well as to touch. Within the mouth it occupies the entire cavity from the floor to the roof, the tongue being pushed backwards, having the apex in contact with the soft palate. Deglutition is greatly impaired, and the attempt to swallow solid food is frustrated by the paralysed condition of the agents engaged in that act. Thus the constitution suffers from partial inanition, and the disease, trivial enough in its early stages, now makes serious inroads on the physical health.

Now, what are the resources of the surgeon? You will tell me either to snip out a piece of the cyst, or to apply nitrate of silver, or, with heroic daring, to dissect out the entire cyst. But a far simpler and far more efficient remedy than either is a simple thread of silk or flax, passed by means of a much-curved needle through the centre of the tumour. It is desirable that the seton thread be passed through the centre, and not through the side of the tumour. At the expiration of five or six days, or sometimes earlier, the ranula will be found reduced to less than half its original size, leaving the thread at some distance from it, but still clinging to the mucous membrane. Of course you remove this first thread, and apply a second in like manner through the residue of the tumour, which will finally disappear in the course of three or four days. The large cysts I have described, and of which I have treated several, are amenable to the same treatment. The thread must be passed through the long axis of the swelling from the mouth downwards. The needle must be strong and nearly straight, and the thread thick in proportion; and the point of the needle is brought out through the skin at the lowest point at which the swelling is perceptible, and the two ends tied in a knot at the angle of the mouth. The reduc-

tion in the size of the swelling may be dated from a short interval of a few days from that of the introduction of the thread. I have never failed to effect a complete cure of ranula by these means, be the disease large or small; and the pain attendant on the entire treatment amounts to almost nothing. There is no danger of hæmorrhage from the introduction of the needle in the large cases, because the tumour in the neck is superficial, leaving the carotid artery and its branches in their natural relations to the structures beneath it. The only vessel requiring observation and avoidance is the external jugular vein.

The seton-thread is a very efficient agent of cure in some cases of *Nævus*. It is not superior to treatment by escharotics in all cases. It is slow in its action, requiring the lapse of weeks; but it has the advantage of saving the skin from destruction, and of leaving a less palpable scar than any other remedy with which I am acquainted. If the nævus is large, the threads should be passed across the morbid growth in various directions, and not necessarily through the centre, but occupying its substance in all directions. The swelling, if large, may require six, eight, or ten threads. The object to be obtained is suppuration, and when obtained, and detected by the oozing of pus, the thread or threads should be removed; and, if conveniently placed for the purpose, a little pressure should be applied.

Phlebitis in its chronic form.—The constitutional treatment of cases of chronic phlebitis should be essentially tonic and stimulating—to an extent, however, regulated by the pulse and the necessary support required by the system. If the tendency to coagulation of the blood in the venous channels be due to defective power in the heart and arterial system, it is clear that stimulants on a very positive scale are essential to recovery. As regards local treatment, a liniment composed of mercurial liniment and extract of opium will be applied along the track of the vessels with advantage, and more effectively if the limb be previously fomented with very hot water for fifteen or twenty minutes, and then carefully bandaged with a flannel roller.

Wounds into joints.—In case of doubt as to the joint being involved, it is hardly necessary to say, avoid all exploration. Nature will not permit any intrusion on or violence done to a joint. Peril almost certainly follows. If the joint be opened, and more especially if the wound through the synovial membrane be large or contused, inflammation follows, and the outer wound, which may have shown a disposition to heal, opens. The margins inflame, or at least assume a red colour; and a watery ichor first exudes from the joint, followed by pus. From the wound large and glassy granulations arise, which are eminently characteristic of a wound into a joint. In this condition writers recommend a free incision into the cavity, under the idea that the joint is irretrievably lost. If the discharge of pus diminishes concurrently with increased pain and swelling of the joint, an incision, with a view to dilate the opening, may be advisable, but otherwise Mr. Skey does not think it is, because he is satisfied, from the observation of several cases, that the joint is occasionally perfectly recoverable. The author can quote at least three cases in which pus was poured out from the knee-joint—in one of three days' duration, in a second of ten days', and in a third of three weeks'. In each and all these cases the joints

were perfectly restored to their natural functions. If this be so, be careful in adopting what Mr. Skey cannot but consider objectionable practice, that of a premature and fatal incision into a joint which is yet susceptible of cure by natural processes.

Air in wounds.—"If," Mr. Skey says, "I ask a student of surgery the reason why a compound fracture of the large bone of the thigh or leg occupies in its treatment so long a time, as compared with that required by a simple fracture, I am almost invariably told, 'Because the air gets into the wound.' Can this be sound pathology? When the admission of air into the wound is given as the cause of the generally untoward and often serious symptoms that attend this injury, it may not unreasonably be inferred that, if not the sole, it is at all events their prominent cause. But to admit this is to ignore other causes far more probable than the presence of air—viz., the laceration and contusion and disorganisation of the structures within. Suppose a healthy man to have sustained a lacerated and contused wound of the outer skin, will it unite by what is termed the first intention? No. The contused margins of the wound, or a part of it, will probably slough, and the wound will heal by granulations, and instead of a week or two, many weeks will be required, if the wound be large, to complete the healing process. And will not this argument suffice in the case of compound fracture, in which so much injury is done to the soft structures around? Besides, what evidence have we that air is admitted, though it is probable that it may be? and, if admitted, what evidence have we of its mischievous character? Can we reasonably infer that the bubbles of air that occasionally escape from the outer wound, indicating the decomposition of the tissues within, are the residue of the air supposed to be forced in at the moment of the accident? Surely not. If surgeons attach so much importance to the presence of air in compound fracture, why is not some effort made to evacuate it before the fracture is 'put up?'"

"I remember hearing an eminent surgeon, when commenting on this commonly-received opinion of the deleterious action of atmospheric air in wounds, assert that, had he undergone the operation for psoas abscess, he would have had the cavity of the abscess distended with air by a pair of bellows! In operations for empyema and hydrothorax, of which I have had a full share, I have never made any attempt to exclude air from the cavity of the chest; and I have published elsewhere one interesting case in which, in conjunction with the late Dr. Todd, we wilfully admitted sufficient air to fill a space previously occupied by six pints of serous fluid. This gentleman had not a bad symptom. In the largest example of emphysema from a broken rib I ever witnessed, the air distended the areolar tissue from the temple to the soles of the feet. It was all gradually removed—I suppose I must say absorbed—in the course of about ten days, except that contained in an enormously-distended scrotum, which underwent no change in size, and exhibited no sign of mischief. This I punctured at the expiration of three weeks. A sudden gush of air, having no offensive character, escaped through the canula, and the scrotum fell flaccid; and in two or three days had recovered its ordinary aspect and sensibility. Surely if atmospheric air is so injurious as is often supposed,

we should obtain some evidence in favour of this opinion from the results of many forms of large operations: the removal of large tumours, herniæ, lithotomy, amputations, &c. If air be admitted to the interior of the body in such cases, it is doubtless absorbed. And why not, admitting its occasional presence in compound fracture? With such palpable causes of morbid actions as are furnished by contused and lacerated structures within, which must pursue an indirect path to recovery, I think we may not unreasonably exempt atmospheric air from all participation in the morbid consequences of a compound fracture."

Ganglions.—Mr. Skey advises the following treatment, which rarely fails to obtain an early, if not an immediate cure. Its object is to evacuate the *entire* contents of the cyst, and to bring its opposite surfaces into perfect apposition with each other. It is a small operation; but on the delicacy of its performance its success materially depends:—Bending the hand forwards, in order to tighten the skin over the cyst, pass vertically into the centre of the tumour a broad-shouldered lancet. By a lateral movement of the instrument the orifice will be dilated, and the contents will freely escape. Now it is indispensable to the obliteration of the cyst that the whole of its contents should be evacuated—every drop and every fraction of a drop, to effect which the sac must be compressed and kneaded in every direction. Then apply a well made thick compress of lint, and strap it down tightly with good plaster, and, lastly, a roller may be applied. In forty-eight hours the wound has healed, and the ganglion is seen no more.

Burns.—Mr. Skey next draws attention to the important subject of the treatment of burns and scalds in all their variety. The treatment usually adopted by the surgical profession generally, and especially by the medical authorities attendant on mines, foundries, and in our larger ironworks, is the following:—The affected parts are bathed in oil—carron oil, as it is called—or oil and lime water in combination. The patient undergoes this process of immersion or local bathing in this very harmless but equally useless compound. The virtue of the oil, it would appear, is in a ratio with the quantity consumed on each case, and therefore the great curative remedy is poured on with boundless liberality. The limb is then placed in flannel, or more commonly in coarse cotton wool or wadding, and the patient is consigned to his bed. This treatment, be it good or be it bad, affords no relief from the exquisite suffering caused by a large burn, the pain of which continues uninterruptedly for several days, depriving the sufferer of sleep, and, indirectly, of food. The principle Mr. Skey is anxious to insist on as far preferable to any involved in the carron oil treatment, is exhibited in the results of the application of heat to any small burn on the hand, as from a drop of melted sealing-wax. The very smart pain occasioned by this trivial accident is entirely relieved by immersing the hand in hot water or by holding the hand to the fire for a few minutes. If this be a fact—viz., that by the brief application of an agent promoting pain (for *heat* is not essential), one important element of the injury, that of pain, is quickly relieved—there must be some virtue in the principle involved. And there is a virtue, and a very important one; for Mr. Skey maintains, from many years' experience in the treatment

of burns, that not only is the pain far more quickly relieved, but that the cure is hastened in the same proportion.

The remedy Mr. Skey recommends is a solution of nitrate of silver in a proportionate strength to the extent and severity of the burn. Mr. Skey has used the solution in the strength of from five to twelve or more grains to the ounce of water. The lotion would, of course, be modified by the age of the person—five grains, or about five, sufficing for a child. If the whole surface be freely bathed with the solution, and entirely covered up in cotton-wool, and a moderate opiate be administered in a glass of brandy-and-water, in strength proportioned to the age and habits of the patient, with the object of counteracting the sense of chilliness that will otherwise necessarily follow in all these cases, Mr. Skey thinks we shall find we have made a good start in the future management of our case. In all cases, whether of burn or scald of the external skin, Mr. Skey says, resort to local stimulants. The soft and soothing system, he believes, answers no useful purpose whatever beyond that of excluding air, if that be, as supposed, a great desideratum.

Cicatrices from burns, &c.—With a view to remedy these evils, Mr. Skey has on several occasions resorted to the Taliacotian operation: dividing freely, and dissecting off the morbidly contracted skin, and replacing it by sound skin from the neighbourhood. But, on the whole, the treatment, he says, has failed.

For several of the latter years of the tenancy of his office of surgeon to St. Bartholomew's Hospital, Mr. Skey adopted, in these and similar cases, a new principle of treatment. "This principle," the author writes, "requires a few words of explanation. If you observe the healing progress of an ulcer, be it where it may, you will not fail to notice the gradual declension of healing power the wound exhibits as it advances, so that an ulcer of four inches diameter requires for the last inch as much time to heal the entire wound as has been occupied in the healing of the previous three inches. It would appear that the curative or healing action became exhausted, and the progress towards complete cicatrisation in the same degree retarded. It is this tardy progress in the healing process of wounds that explains the condition of these singular cases, and renders them so difficult of control. Almost every description of open wound, as you well know, heals from the margin. There are exceptions to this natural law in the case of old phagedænic ulcers, in which an island of cicatrisation forms in the midst of the granulations; but I do not recollect to have seen this feature in any common wound. The healing power of a wound is in a relation with the extent of its margin, a wound of four inches square having a healing margin, and therefore a healing power, of 16 inches. Divide this wound into four, of one inch each, and you have a healing margin of 64 inches. Again divide it, in theory I mean, and you have a margin of 128 inches. Now, if the fact I have stated be true, that the healing process of wounds is retarded at every step it takes, you will readily see that the smaller the wound the more rapid the healing process; and, if instead of one large wound, you make twenty small wounds, the healing process is completed with great rapidity, and the evils attendant on these large cicatrices may be removed by very simple

means—viz., the relaxing the tension caused by these bridles by making a large number of small divisions of the cicatrix instead of one large one. Carrying into execution this principle, I have treated these cicatrices by small incisions in various parts of the body for some years. In my first case, in which the thumb of an in-door patient was attached to the index finger, which had resisted various efforts to permanently dis sever it, I fixed the thumb in full abduction by some slight mechanical agent, and then made about eight to ten incisions through the skin and subjacent tissue, each incision not exceeding eight or nine lines in length. In ten days the man had perfectly and permanently recovered the entire use of his thumb. I then adopted the principle on a larger scale in the neck and at the elbow-joint, and I am quite satisfied of its soundness. I believe the smallest possible margin to each wound will suffice for the cicatrising process, and the incisions should be made with all caution, that they do not run into each other."

Refracture of bones.—"Two important questions," Mr. Skey writes, "arise in connexion with this subject:—

"1. Will the bone thus broken again reunite? Why should it not? If nature has firmly united the broken bone in the first instance, why should she not in the second? The power of uniting a broken bone is inherent in every sound constitution. The very fact of primary union infers the presence of ossific power.

"The second objection which has been raised is the uncertainty of separating the bones at the point of fracture. This is a frivolous objection. If a man of good muscular power fails with his greatest effort to break even a radius in the dried state, how can the shaft of the femur be broken by the muscular power of the human arm?

"Granted (1) the impracticability of fracturing a living bone of the smallest calibre for which the operation of refracture can be required; (2) the all but certainty of reunion; (3) the simple and innocuous nature of the operation as regards the soft structures; and (4) the perfect safety of the shaft of the bone—what objection can be urged against an operation which contemplates the removal of a serious evil to the frame without suffering or inconvenience? The only limit to time is the power to break. I made a vigorous attempt to break the femur at ten months. In this I failed, but the man walked back to his ward without pain or difficulty. Chloroform having been administered, the limb is brought to the edge of the table, which is covered with half a dozen folds of a blanket. The weight of the body of the operator is brought slowly and gradually to bear on the point of fracture; and any additional force in moderation may be resorted to. The separation will be audible to bystanders, and when the rotation of the lower fragment proves the entire separation of the fractured ends, the movements should be freely made with a view to detach all the fibrous adhesions yet connecting them. The sensation to the surgeon manipulating is not that allied to crepitus. The impression conveyed to the hand has nothing of the crispness caused by a recent fracture, but rather like the laceration of soft or fibro-cartilaginous substance yielding under continuous pressure. Pulleys very deliberately applied are requisite to overcome the long-continued contraction of the muscles. The artery has been abnormally shortened, and will rejoice in its restoration."

Gonorrhœa and gleet.—In the treatment of gonorrhœa, we should always keep in mind the important fact that it has a natural period of subsidence, or cure, if untreated; that at the expiration of six to eight weeks it will die a natural death. Therefore, it cannot be a wise or judicious proceeding to commence the treatment by active purgation, or other form of depletion. Mr. Skey believes a mild aperient or two to be unobjectionable, and he has found benefit from a powder containing twenty grains of jalap and two drachms of powdered gum arabic, taken at night in half a tumbler of milk. This may be repeated for two or three nights, and then we should rest on our oars for a week or ten days, abstaining from active exercise, but adhering to the usual habits of diet, unless the daily consumption of wine or other alcoholic drinks is large; if so, Mr. Skey would reduce them partially both in quantity and potency. As early as the local pain and the profuse discharge are somewhat reduced, Mr. Skey advises us to resort to iron, quinine, or other tonics, and to increase the consumption of wine on the same tonic principle, commencing with a moderate dose, and increasing the quantity rapidly up to a full dose of the compound medicine. Mr. Skey generally prescribes ten or twelve grains of the citrate of quinine and iron twice daily. At the expiration of about a week from the commencement of the treatment by tonics, a simple injection of one grain of sulphate of zinc to the ounce of water, to be used night and morning, and then thrice daily. It may be necessary towards the latter stage, if the progress is slow, to add ten minims of copaiba balsam twice daily. Beer is unobjectionable.

In cases of primary gleet, the success of the tonic treatment above mentioned is remarkable, as it will often, in mild cases, cut the disease short in three or four days; but in such examples, there is an entire absence of painful micturition and chordee. If these symptoms are present, the tonic agents should not be resorted to until the expiration of a few days. If, unfortunately, orchitis should occur pending its existence, the treatment by tonics, most valuable in its absence, should not be resorted to.

Syphilis.—"As regards primary sores," Mr. Skey says, "*three-fourths* of all primary sores obtained by sexual intercourse are not syphilitic; they are termed soft sores, and they never affect the constitution to whatever size they may extend, and they do occasionally extend to the magnitude of a finger-nail. The glands of the groin may, as in gonorrhœa, be involved, and may suppurate. Like gonorrhœa, the soft or common sore has a stage of advance, maturity, and subsidence by the hand of unaided nature. The sore recoils from interference by art or science. The syphilitic poison involves the constitution. It is not necessarily the product of the hard sore, though generally so. The hardness of a sore, when present, is palpable; but a sore primarily destitute of hardness may, like the sore primarily hard, involve the constitution. And in this notorious fact consists one of the greatest difficulties of diagnosis in venereal disease; because we have not arrived at such precision of knowledge as enables us to distinguish the soft sore that accomplishes its full career without involving the constitution, and that other soft sore which becomes more or less hard during its progress, and which almost inevitably leads to secondary disease. The

hard sore is the product of a deposit of syphilitic thickening. The thickening is the immediate result of the absorption of syphilitic matter. The poison has been absorbed through the delicate membrane of the prepuce or glans, rarely through the external integument, and is supposed to have involved the constitution contemporaneously with the local deposit, and therefore that auto-inoculation, or the inoculation of the individual with the matter from his own sore, fails, according to the creed of many surgeons, especially of the French school. In the case of the hard sore, the disease consists in the induration itself, rather than in the sore, if there be a sore, for the deposit may exist without any abrasion of surface whatever. The hard sore is tardy in its appearance, sometimes following intercourse at the interval of ten, fifteen, or twenty days. As a rule it is painless. The sore continues for a time to increase in size. It may present itself as a hollowed-out cavity, secreting sparingly an ichor; or, secondly, as a red-raw abrasion on a large hard base or mass; or, thirdly, as a solid tubercle under the skin which is unbroken: the latter form is, however, rare. The inguinal glands enlarge and become hard. They swell without involving the tissues around, as occurs in the inguinal enlargements of the common soft sores. They never suppurate, but continue hard throughout.

“Thus matters remain, whether mercurial or other treatment be adopted or not, until the constitution gives evidence of the presence of the poison in the system. This becomes manifest in the course of five or six weeks. The first indication of constitutional derangement consists in the presence of fever, or rather of febrile symptoms, such as chilliness, quick pulse, followed by a sense of lassitude, pain of a rheumatic character in the joints. On the subsidence of this stage, sore-throat follows, for the most part painless, involving chiefly the arches of the palate. An eruption, resembling roseola, appears on the chest and abdomen, the arms, thighs, and forehead, and often on the entire surface of the back. In some cases this eruption assumes the nature of psoriasis or lepra; in which case it is limited more generally to the front of the trunk and anterior surface of the arms. These two forms of eruption, very dissimilar in character, as I believe, hold a relation to the two different forms of primary sore. I think you will find that the hard sore, which is destitute of pain, has little moisture exuding from its surface, that appears late after intercourse, and the progress of which is more than ordinarily slow, is followed by the dry forms of eruption, such as psoriasis and lepra. Concurrently with, or shortly following, the eruptive stage, is frequent enlargement of the posterior cervical glands, and the partial loss of the hair, termed alopecia. Then follow small ulcers on the tongue, gums, and inner surface of the lips; ulcers of the tonsils, and occasionally honeycomb desquamation of the palms; iritis, and painless enlargement of the testicle. In the yet more advanced stage, we find deposits of fibro-plastic matter in all the tissues.

“How far all these manifestations of constitutional syphilis are modified by peculiarities of constitution, we are uncertain; but I think there need be little hesitation in asserting that they are so modified.

“Before I proceed to the important subject of treatment, I will

briefly refer to two questions yet *sub judice*: first, the liability to a recurrence of syphilis in a person who has been once syphilised; and, secondly, the period after apparent recovery at which marriage is justifiable.

“As regards the first question, I do not think the evidence of exemption from a second attack is by any means conclusive.*

“The second question is a far more critical one, involving the health and happiness of many, and should be answered only after the full deliberation due to the important issues arising out of it. In a few words, I would suggest that it is not so much a question of time as of degree. Some authorities, of doubtful weight however, deem marriage unsafe for life; others sanction marriage at the expiration of a short term of months. It is notorious to all that the disease is recurrent—that few subjects escape a second and even a third relapse. I consider that our opinion in respect to this question should be founded on the history of the past—whether the attack has been mild or severe, whether the intervals have been brief or prolonged, and especially from the fact of each relapse being less marked and severe than the previous one when the poison would appear to have died out. Under these conditions, if favourable, after a period of from four to six months, during which no indication of the poison has appeared in the system, I think marriage may be sanctioned by the surgeon; but if the disease be insidious in its character, and peer out in any shape however slight, the poison is yet present, and marriage is unsafe, and should be indefinitely postponed.

Treatment of the local sore.—If the local sore can be subjected to treatment within a term of three days, free cauterization with nitric acid, or other escharotic, will generally convert it into an innocuous ulcer. After three or four days the treatment throughout should be purely negative. No specific agents are useful. Simple dressing of spermaceti is as good as any other. In the latter stage, or that which immediately precedes cicatrization, the nitrous oxide of mercury ointment will accelerate the healing process. No condition of this sore in any of its well-marked stages can warrant the employment of mercury. If the soft sore in its progress show a tendency to deposition beneath it, and it assume the condition of induration, although the indurated base exhibits less dimensions than the primary hard sore, yet the question of mercury immediately occurs to the mind of the surgeon.

“And on the subject of mercury I must occupy your attention for a few minutes. The influence that mercury exercises on the deposit of hard sores has been long known to the medical world. By Mr. Hunter it was resorted to indiscriminately in all forms of venereal sores, and it is perhaps not surprising that his successors (excepting always the school of Abernethy) should have resorted to mercury as the great and universal antidote to venereal sores, whether hard or soft, whether local or constitutional. But since venereal diseases have become the subject of more critical observation, our lines of demarcation are more closely defined; and while we are compelled to resort to mercury in some forms of the disease, we as rigidly eschew it in others.

* *Vide* Government Report on Venereal Disease.

“The action of mercury tends to increase the secretions of the body, and at the same time to promote absorption of morbid deposits. It cannot be said to exercise any direct influence on the *poison* of syphilis, but only on the effects or consequences of the poison. It is not to be considered as exercising the power of a specific, because it cannot destroy the poison. It has the power to lessen and to obtain absorption of the hard deposit, but the poison remains behind to develop itself hereafter. If it were a specific, if it possessed the power to directly neutralise the poison, a man under salivation would be unsusceptible to the influence of the disease after intercourse, which he assuredly is not. It is not very uncommon for the eruptive stage to appear during the treatment by mercury for the primary sore. I believe a course of mercury, if exhibited with due care and moderation, is not necessarily injurious to the health; but it is painful to read the frightful and often fatal extremes to which it was carried in the early part of this century. As almost a matter of course, surgeons resort to mercury in every variety of hard sore, because it would appear to be a great object to attain the absorption of the thickened or indurated mass, and to heal the ulcer upon it. But is this object so essential as it appears? Look to the evidence on this head given by many eminent members of our profession before the Admiralty Committee.* You will learn therefrom that great doubts cling to the minds of some of these eminent men whether the treatment of primary sores by mercury tends either to prolong the interval before the secondary or constitutional symptoms develop themselves, or to lessen their severity when they do appear. In whatever form you administer mercury, watch carefully its effects on the local disease, and on the constitution. As the hardness subsides, reduce the dose in a relation to the influence it appears to exercise. Avoid salivation in every stage, and maintain your patient's strength throughout. In the constitutional or eruptive stage, when it assumes the dry forms of psoriasis or of lepra, mercury is less injurious to the health in protracted cases; but employ it sparingly in all moist eruptions, vesicular, pustular, or impetiginoid. A great and valuable adjunct is ever found in iodine, and the iodide of potash, in doses from five to fifteen grains, will often supersede the employment of mercury entirely. It may be combined with full doses of the tincture of bark.

“With this very imperfect sketch of syphilis I conclude with a brief reference to the subject of phagedæna. Do not mistake phagedæna for syphilis; and here I speak with some hesitation, knowing that the two diseases are not unfrequently confounded. Syphilis is characterised by a hard deposit, phagedæna by destruction of tissue. This destructive process is obtained by active ulceration or by sloughing; sometimes both processes are united in the same wound. Commencing from a local venereal sore, the sore extends, ulcerates rapidly, sloughs, and burrows beneath the surrounding tissue. The local actions may be destroyed by nitric acid, but the disease bursts out in the form of an eruption, which quickly develops in that of active and destructive

* Report of Committee. *Vide* evidence of Langston Parker, Jonathan Hutchinson, S. A. Lane, and others.

ulceration in any part of the surface of the whole body. As to treatment, I would say, any remedy but mercury. Iodides of iron and potash, good air, ample diet, wine in moderation, and nitric acid (pure or diluted), locally applied in proportion to the activity of the destructive local actions."

ART. 149.—*On Simple Dressings by Continuous Bathing.*

By M. LEON LE FORT.

(*Gazette Hebdomadaire*, No. 22, 1870.)

M. Le Fort concludes his article with the following resumé :—

"If we consider the indications which surgeons have endeavoured to realize in their different methods of dressing, we shall find that they are the following :—

"To keep the wound excluded from the air and to modify it, when there is occasion, by the application of certain substances.

"To maintain around it a certain amount of moisture.

"To prevent the decomposition of the pus imbibed by the dressing.

"To keep the wound perfectly clean.

"To prevent adhesion of the dressings.

"To destroy the germs which may be the starting points of infection."

A very slight modification in the dressings generally employed has enabled M. Le Fort to fulfil these indications. He rejects absolutely the use of all kinds of fatty bodies, and extends the same proscription to diachylon when he is dealing with a recent wound. He never, at least in hospital practice, employs charpie, which by its faculty of absorption may be the receptacle of infecting germs. He covers the wound with one or more compresses saturated with a mixture of water and about a tenth part of alcohol or camphorated alcohol. If the wound requires stimulating he adds, in varying proportions according to the case, a solution of sulphate of zinc (one part to ten), and envelopes the whole of the corresponding portion of the limb with oil silk, which is maintained in its place by several turns of bandage, and he takes great care that the inclusion of the parts is complete and hermetic.

Evaporation of the fluid with which the compresses are impregnated cannot take place, and the products of the insensible perspiration which operate normally at the surface of the skin being retained, the dressing is thus transformed into a form of permanent bath. Without the inconveniences of maceration which causes the tissues to swell and apparently diminishes their vitality, and without the restlessness caused by the necessity of apparatus difficult to manage, and which cannot be generally used, one obtains thus the advantages of the baths of Mayer, Langenbeck and Valette (de Lyon), or even of a continuous irrigation. The sedative action of the water, tempered according to the indications by the use of medicated solutions, moderates the inflammation and maintains it within the limits necessary for the process of cicatrization.

The pus, freed from the contact of the air, does not undergo any modification; it remains, it is true, in contact with the wound, but the

dressing *par occlusion* has long demonstrated the harmlessness of unaltered pus.

The compresses cannot get dry, they do not adhere to any part of the wound, can be readily detached and cause no apprehensions about excoriation of the granulations. As to cleanliness one can readily see that this is obtained in an absolute manner. Finally, if the idea of infection be admitted, and the infection of germs, the cleansing of the wound at the time of the dressing with a weak solution of alcohol, and the renewed application of compresses dipped in the same solution and enveloped hermetically, are efficacious means for protecting the parts against any contamination.

ART. 150.—*Chilblains and Chapped Hands.*

(*Medical Press and Circular*, November 2.)

To those specially liable to these tiresome and painful affections, we recommend as a preventive wearing kidskin gloves lined with wool, which not only keep out the cold, but absorb any moisture that may be upon the hands; and to rub over the hands before washing a small quantity of glycerine, which should be allowed to dry or become absorbed to a partial extent. When chilblains do manifest themselves, the best remedy not only for preventing them ulcerating, but overcoming the tingling, itching pain, and stimulating the circulation of the part to healthy action, is the liniment of belladonna (two drachms), the liniment of aconite (one drachm), carbolic acid (ten drops), to collodion flexile (one ounce), painted with a camel-hair pencil over their surface. When the chilblains vesicate, ulcerate, or slough, it is better to omit the aconite, and apply the other components of the liniment without it. The collodion flexile forms a coating or protecting film, which excludes the air, whilst the sedative liniments allay the irritation, generally of no trivial nature. For chapped hands, we advise the free use of glycerine and good olive oil in the proportion of two parts of the former to four of the latter; after this has been well rubbed into the hands and allowed to remain for a little time, and the hands subsequently washed with Castile soap and tepid water, we recommend the belladonna and collodion flexile to be painted, and the protective film allowed to permanently remain. These complaints not unfrequently invade persons of languid circulation and relaxed habit, who should be put on a generous regimen and treated with ferruginous tonics. Obstinate cases are occasionally met with which no local application will remedy, until some disordered state of system is removed, or the general condition of the patient's health improved. Chapped lips are also benefited by the stimulating form of application we advocate, but the aconite must not be allowed to get on the lips or a disagreeable tingling results.

ART. 151.—*On the Suppression of Pain after Operations.*

By M. C. SEDILLOT.

(Gazette Hebdomadaire, Nos. 22, 23.)

(a) Electrothermy suppresses or reduces the intensity of pain following operations, and may be regarded as the continuation and complement of the grand discovery of anæsthetics.

The latter abolish for a time general sensibility, motility and intelligence, but they do not exempt patients from the suffering which is undergone on the return of the free exercise of their cerebral functions. Pain, generally very acute, is redoubled at this period, and attended with anxiety. The altogether local insensibility of wounds produced by the destruction of nerves, relieves the patient from evils of this kind, and prevents the restlessness, the erethism, and the agitations, which may be caused by pain.

(b) Electrothermy applied with a sufficient mildness so as to form dry eschars with an average thickness of two millimetres, or a maximum thickness of four millimetres, prevents hæmorrhage, and enables the surgeon to avoid the loss of a single drop of blood—a considerable advantage when one knows that the danger of traumatism is often in direct relation to the greater or less quantity of blood effused, and that in certain patients already reduced the most feeble hæmorrhage may be mortal.

(c) The dry eschars which cover and close all the vascular orifices prevent extravasation of fluids, the interstitial or collective retention of these or any subsequent changes, and guard the patient from the dangers of contagion, and of infectious, putrid and purulent complications. The enveloping and protecting surfaces normally represented by the integument, and artificially re-established, facilitate organic repair under the remarkably favourable conditions of subcutaneous wounds, and at the moment of the elimination of the eschars the febrile reaction is either absent or else retarded and very slight. Thus may be explained in the majority of cases the continuance of health, of appetite, of sleep, and of the security and confidence of patients.

(d) The advantages of electrothermy have been discovered and pursued by most eminent surgeons, but with means which did not permit the complete realization of their hopes. The utility of potential cauterization and the phenomena and happy results of subcutaneous surgery have already been studied and acknowledged. Desiccation and superficial cauterization of wounds, linear crushing, metallic serre-nœuds, and aspiration of pus from the surfaces of stumps, are so many attempts that have been inspired by the same ideas and the same researches, and show with what ardour and ability surgeons have contended against actually serious consequences and have sought means to remedy them. All these indications are combined and fulfilled in electrothermy.

(e) Electric heat, whether intense or feeble, continuous or intermittent, whether capable of converting tissues into eschars, of carbonizing them, or thoroughly decomposing them into gases, can be applied in the most varied operations. The best apparatus for surgical purposes will be

that the most powerful intensity of which is susceptible of being instantaneously reduced to less elevated degrees. There is no hæmostatic temperature, and one contends against hæmorrhage with lamellar cauteries at a white heat lightly and repeatedly applied to the vascular orifices. If one be using a metallic loop applied round the pedicle of a tumour, an organ, or a limb, the heat ought to be of sufficient intensity to cut into and very slowly divide the tissues by transforming them into a thick eschar. The most energetic current does not redden threads of platinum applied to the skin or deeper seated parts to which heat is transmitted. Incandescence does not appear except in free air or with partial contact. Threads or blades of platinum at a red heat cut the flesh with the rapidity of a bistoury without producing obliterating dots or a solid and resistant eschar; but if the application of the heated metal be very superficial and repeated, eschars are formed which prevent the flow of blood. The great principle is to act slowly, and it is with the aim of regulating the degree of heat according to its effects that one ought to seek after a proper apparatus for fulfilling this indication. We shall then arrive at a means of instituting a kind of electrothermic linear crushing capable of affording results that the advocates of simple linear crushing have hitherto only hoped for.

(f) The operative indications are very numerous, and might yet be extended.

(g) Experiments carried out on animals, and clinical observations, demonstrate and confirm the advantages of electrothermy, and place this method in the number of the most remarkable progressive steps of surgery.

ART. 152.—*On the results of Capital Operations before and after the Employment of Anæsthetics.*

By Prof. ED. SIMONIN.

(*Compte rendu des travaux de la Société de Médecine de Nancy; Gazette Hebdomadaire*, No. 29, 1870.)

In the pursuit of his studies on the benefits resulting from the employment of anæsthetics, Dr. Simonin has established a comparison of the results of capital operations performed by him before the employment of anæsthetic agents, and those performed under their influence. As the author remarks, the use of anæsthetic agents commenced at a period already too remote for the great majority of operators to be able to establish these comparisons from their own practice. On this point M. Simonin has the advantage of being able to offer two comparative series from his own practice at the Nancy Hospital, extending over thirty-four years.

The author takes into consideration only the large operations. The first series, from 1835 to 1847, includes 107 operations performed without the use of anæsthetics. The second, from 1847 to 1869, includes 229 operations performed under the influence of anæsthetics.

We will quote the most important tables:—

In amputations of the thigh, the first series, without anæsthesia,

gives 4 deaths out of 7 operations, or a mortality of 57 per cent.; the second series, with anæsthesia, gives 8 deaths out of 23 operations, that is to say, 35 per cent. of fatal cases.

In amputations of the leg, the first series gives a mortality of 45 per cent., the second series 21 per cent.

The amputations of the arm present a mortality of 25 per cent. in the first series, and of 21 per cent. in the second.

In cases of strangulated hernia the results are still more striking: thus, before the employment of anæsthetics the mortality was 36 per cent., since their employment it had descended to 10 per cent.

Operations for the removal of tumours, and amputation of the fingers and toes, present no very marked differences in their results.

One will probably object to these statistics that their extent is too restricted, and might also point out the progress made in the accessory treatment of patients who are operated on. But one must allow that the results in themselves are very significant, and that they have been confirmed by military statistics. The quantity of the results in the latter case seems to have been composed by the unity of the field of observation, and one of the means for multiplying the observations which make up statistical information will be to follow the example set by M. Simonin.

ART. 153.—*On Arterial Transfusion.*

By Prof. HUETER and Dr. ALBANESE.

(*Archiv für klinische Chirurgie*, Bd. xii., 1870; *Gazetta Clinica di Palermo*, Nos. 6 and 7, 1869; *Gazette Hebdomadaire*, No. 22, 1870.)

Under the name of arterial transfusion, Prof. Hueter designates a method of transfusion in which blood extracted from a vein of a healthy individual is introduced into a patient's artery. The published works and the observations of Prof. Hueter gain for him the whole merit of this modification in the proceeding of transfusion, and, as we shall find, experience has already demonstrated the advantages of arterial transfusion.

Prof. Hueter has, in a recent article, explained the technical conditions of his method. Of these we will give an analysis, alluding at the same time to clinical facts already observed.

Prof. Hueter uses defibrinated blood extracted from the vein of a sound individual. Whilst an assistant is producing defibrination by whipping and filtration of the blood through linen, the operator exposes an artery of the patient. One chooses in preference the radial artery, above the radio-carpal articulation; or the posterior tibial artery, below the internal malleolus. These two proceedings are attended with no difficulty. The artery is isolated for an extent of two or three centimetres, and four strong threads are introduced under the vessel. Three of these threads have a definite use; the fourth is one of reserve. The superior thread serves as an ordinary ligature, opposing all flux of blood coming from the heart. Another thread is loosely tied, so that it might immediately arrest any recurrent hæmorrhage. A transverse in-

cision is then made into the artery with scissors, and about one-half of the vessel is cut. A tube can then be readily introduced in the direction of the foot or hand, and this is fixed by means of the third thread.

If it be necessary to make several injections, the second thread serves to produce a momentary occlusion of the artery. Finally, when the operation is terminated, this thread is tightened. Such is the proceeding that has been carried out by Prof. Hueter in eight operations for arterial transfusion.

From these cases the author has concluded that one may inject into the capillary system, in the course of a few minutes, as much as 500 grammes of blood.

No trace of blood extravasation is to be found after the operation, and no inflammation is caused in the hand or foot operated upon.

Still, there may result a phlegmonous attack at the very seat of the operation. This happened in a case of transfusion practised on a leucæmic patient under the care of Prof. Mosler.

The phenomena accompanying transfusion are remarkable. Although extravasation has never been observed, there is certainly a marked dilatation of the small vessels. The papillary body is filled with a mass of blood more considerable than that which it contains in the physiological state, and even in a state of inflammation. The whole skin becomes swollen, and presents a purple coloration, especially on the dorsal surface of the hand or foot. But these phenomena disappear rapidly at the same time that a profuse perspiration covers the extremity. Some patients, during transfusion, experience a sensation of formication, which may persist for the twenty-four hours. Patients also complain of a feeling of heat in the extremities.

The necessary pressure for causing the blood to penetrate into the capillaries, and to overcome the pressure transmitted from the collateral vessels, varies according to the nature of the patient's disease, but it is generally exerted without difficulty.

To resume. According to Prof. Hueter, arterial should not be more difficult than venous transfusion. It does not, more than the latter proceeding, expose the patient to the risk of consecutive local lesions, such as phlegmon; the lesion of the artery is not attended with greater danger than that of the vein; and arterial transfusion guards from thrombosis and embolism, which have been frequently observed in transfusion by the vein.

Dr. Albanese, of Parma, has already carried into practice Hueter's method, and reported seven cases of arterial transfusion. He has operated in three cases of anæmia, four cases of septicæmia, and made his injections by the radial artery. The results obtained have been very satisfactory, as four patients—three with anæmia, and one with septicæmia, were saved.

ART. 154.—*On the Torsion of Arteries as a Hæmostatic Method.*

By JOHN D. HILL, F.R.C.S., Surgeon to the Royal Free Hospital, and Assistant-Surgeon to the Royal Orthopædic Hospital.

(*The Lancet*, November 5.)

Mr. Hill states that he has already practised torsion of arteries in upwards of seventy surgical operations, and without one instance of hæmorrhage, secondary or recurrent. The process of healing for the most part has been satisfactory, in some cases complete primary union having occurred where such would have been impossible in the case of the ligature; in others deep-seated adhesion with granulation of the more superficial structures. Judging from present experience, torsion seems adapted to every kind of operation, whether great or small. As compared with the ligature, its application is more simple and rapid; and should failure occur, it does so on the operating-table. On one occasion only this happened to Mr. Hill. After twisting some athetomatous tibial arteries, one of these arteries gave way just above the twist, and the ordinary ligature was also followed by a like result. Ultimately, however, Mr. Hill secured the degenerated artery (on the principle of acupressure) within a collar of muscular fibres, exerting sufficient compression to arrest the current of blood without breaking the internal tunics.

In the post-mortem examination of arteries which had been submitted to torsion during life, Mr. Hill has discovered no twisting of the internal membrane, as pointed out by Mr. Costello; but simply that incurvation or invagination of the middle and internal coats, so well described by Mr. Bryant's drawings in the fifty-first volume of the *Medico-Chirurgical Transactions*.

ART. 155.—*On Skin Grafting.*

By GEORGE D. POLLOCK, F.R.C.S., Surgeon to St. George's Hospital.

(*The Lancet*, November 19.)

At a meeting of the Clinical Society of London, on Nov. 11th, Mr. Pollock read particulars and exhibited several cases of skin-grafting and skin-transplantation. In relating the particulars of the first case in which skin-grafting had been attempted in this country, he stated that in 1869 M. Reverdin originated in Paris this method of treating large ulcerated surfaces. In May, 1870, the author first heard of M. Reverdin's experiments, and at once decided to test the treatment. A girl, eight years of age, had been in St. George's Hospital for some three months and a half, with an extensive open burn of the right thigh, of more than two years' duration. The ulcerated surface extended from the buttock to the knee—broad above, and ending almost in a point below. Mr. Pollock at first transplanted two small pieces of skin about the size of millet seeds, taken from the lower part of the

abdomen. Subsequently three, and again other pieces, were transplanted at various periods—in all, about fourteen pieces had been transplanted. The child was exhibited to the members of the Society, and it was seen that this extensive burn was nearly healed, in a period little over five months, without any perceptible contraction of the cicatricial tissue originated by the transplanted skin. The child had greatly improved in health as the progress of cicatrization had advanced. In this case two pieces of black skin had been on one occasion transplanted to the ulcerated surface, and became attached: when increased in size, the area of the pigment deposit had considerably increased in one of them, although the whole of the cicatricial tissue due to the transplantation of this portion of skin was not generally dark-coloured. The sore was attacked some time after by sloughing, which was chiefly confined to the portion in which the black skin had been engrafted, and unfortunately destroyed the whole of the cicatrix due to this transplantation. Mr. Pollock made some general remarks with respect to the mode of transplantation, and the conditions requisite to the success of the operation. He usually transplanted very small pieces, similar to the plan pursued by M. Reverdin, and considered it essential to the success of the operation, that the surface of the granulations should be in a healthy state. In some cases the operation had entirely failed, in consequence of the state of the sore. In other cases, though the piece transplanted had become attached and vitalised, yet, owing to the state of the patient's health, it had remained stationary, and gave no sign of increase. Mr. Pollock, in conclusion, thought a tribute of admiration and gratitude was due to M. Reverdin from the profession for the boon he had conferred upon surgery by the introduction of this original method of dealing with large and obstinate ulcers.

ART. 156.—*On Skin Transplantation.*

By GEORGE LAWSON, F.R.C.S.

(*The Lancet*, November 19.)

At a meeting of the Clinical Society on Nov. 11th, Mr. Lawson read a paper "On the Successful Transplantation of Portions of Skin for the Closure of large Granulating Surfaces." He exhibited two patients in whom this mode of treatment had been attended with satisfactory results, and related the history of a third who had been equally benefited by the method of transplantation. In one patient a large ulcer of the leg, which had resisted all treatment for over four years, was completely closed in a few weeks after a piece of skin the size of a four-penny-piece had been planted on it. As soon as the new skin had established its vitality, granulations sprang from the circumference, and rapidly closed-in the wound. In another patient the results were equally satisfactory. In a third case Mr. Lawson formed a new eyelid for a patient who had a complete ectropion of the upper lid. He dissected the lid from its attachments, pared at two points the corresponding tarsal margins, and united them by two fine sutures, and thus obtained a fixed level surface upon which to transplant a portion of

skin. The parts were then left, and on the fourth day, when the wound was covered with healthy granulations, he transplanted a piece of skin of the size of a threepenny-piece, and two days later another portion, of the size of a silver fourpenny. Both pieces rapidly united to the granulating surface, and the space between them was speedily filled up with new cicatricial tissue. A new lid was thus formed, which was sufficient to protect the eye from exposure; but the presence of two pieces of skin, different in appearance to the ordinary eyelid integument, gave to the patient a peculiar and rather unsightly look. In each of these patients the skin which was engrafted not only soon became vascular, but acquired sensibility, and after ten or twelve days could appreciate the slightest touch with a blunt instrument. The conditions which Mr. Lawson found essential for the operation were:—1. That the new skin should be applied to a healthy granulating surface. 2. That skin *only* should be transplanted, special care being taken that no fat adhered to it. 3. That the portion of skin should be accurately applied to the granulating surface. 4. That the new skin should be kept in position without interruption, and that it should be lightly covered with a layer of lint, and over that a small compress of cotton-wool, and a bandage, for the purpose of maintaining its warmth, and thus to assist in retaining its vitality until it had established its new life.

ART. 157.—*The Treatment of Ulcers and other Granulating Surfaces by Transplantation of Skin.*

(*Medical Times and Gazette*, October 29.)

Since Mr. George Pollock's first trial of the ingenious method, proposed by M. Reverdin, for hastening the healing of ulcers, by transplanting to their surface little bits of healthy skin from other parts of the body, the capital results obtained in St. George's Hospital have attracted much notice, and the treatment has been already, since July, widely adopted, and, as we hear, with unexceptionably favourable results when employed in suitable cases. It will interest such of our readers as are not acquainted with this mode of procedure if we briefly relate Mr. Pollock's first case, and subjoin other instances from some of the London Hospitals. The child in St. George's Hospital was eight years old, and had been severely burnt eighteen months previously, as a result of which a large granulating surface, about eighteen inches long and twelve wide, occupied the outer aspect of the lower portion of the thigh. Such a surface would, of course, require a very long time to heal over in the ordinary manner, and, in point of fact, it had made hardly any progress for some months before the child's admission. Early in May, Mr. Pollock took two minute portions of skin from the child's side, and making incisions in the granulating surface, planted the morsels, and kept them in place by a piece of strapping. At first almost buried from sight, these bits by the end of the second week became visible as minute foci of cicatrization, and thence continued to increase very satisfactorily. Other bits were now inserted in fresh portions of

the ulcer, and these growing in like manner, the large raw surface was rapidly converted into a healing sore, cicatrization proceeding from several islets simultaneously. It is noteworthy that in this case the pieces transplanted were said not to exceed millet-seeds in size, and much stress was laid upon this fact—the minute size of the grafted portion being deemed essential for the success of its subsequent growth. Later experiments have shown that much larger bits are quite as efficacious. Some of the portions of skin grafted by Mr. Lawson, in the Middlesex Hospital (cases quoted further on), were quite as large as sixpenny-pieces, and these took on a capital growth, the original bit remaining quite distinct, as an island of pale healthy skin in the midst of bluish glazed cicatricial tissue, after the ulcer had completely healed. Neither is it necessary to prepare the site of the transplanted portions by irritating or disturbing the granulations in any way.

The whole process is an exceedingly simple one. Having waited until the wound or ulcer has assumed a fairly healthy granulating appearance, with a small pair of forceps and a sharp pair of scissors a little bit of sound skin is pinched up and cut off. The scissors are more handy when curved on the flat, and care must be taken to include in the bite of the forceps the whole thickness of the true skin. The inside of the upper arm is a convenient place from which to take these portions, and the process gives so little pain that patients hardly wince when it is done. The little bit is then pressed flat with its under surface upon the granulations, and kept firmly applied by a strip of plaster passed across the ulcer. The transparent isinglass plaster is useful, in permitting the surgeon to see through it and watch the fate of the graft. This plaster may be left for five days or a week, by which time the little bit will have become firmly attached in its new bed, and, perhaps, if very small, imbedded and hidden amongst the granulations. It will soon, however, become again apparent, and then, with a lens, the characteristic blue line of growing cicatricial tissue will be discerned surrounding it. The great value of this plan of treatment, in the healing of the large raw surfaces left by severe burns, in which cicatrization by ordinary means is so apt to produce severe deformity, is obvious; but to surgeons with much out-patient practice amongst the poorer classes, it will be a further real boon in raising that *bête noire* of out-patient practice, the chronic ulcer of the leg, from the depressing and irritating position it now occupies to the level of an interesting subject for ingenious and successful treatment.

The Westminster Hospital.—So far as we know, Mr. Francis Mason, at this Hospital, was the first to repeat Mr. Pollock's experiments. We had the opportunity of seeing the first of his patients; a girl, who had received very severe burns, and who was in consequence seriously deformed, the face being drawn down upon the chest. Mr. Mason hoped to develop the grafting plan in this case by transplanting portions of sound skin on to freshly-cut surfaces after freely dividing the tissues. In this he was disappointed; and we believe that in a subsequent trial, when the surface was granulating, the process again failed. This case was one of special interest, and is to be published in detail elsewhere. Since then, however, Mr. Mason has applied this treatment to eight other cases, and generally with success. Once it

failed completely, all four grafted bits dying; and on another occasion three out of four sloughed, the remaining one making but feeble way. These failures arose from the trial being made upon unhealthy ulcers. In all cases pieces the size of canary seeds were employed, and in all these bits remained perfectly visible throughout the process.

University College Hospital.—Shortly after the Westminster cases, Mr. C. Heath, at University College Hospital, applied the method two or three times. We saw the first two of these on the occasion of a ward visit on Sept. 7th. The process was exactly that which we have described above.

M. S., a woman, aged forty-six, was admitted under Mr. Erichsen's care, with encephaloid disease of the breast, for which the whole breast was removed, together with much skin. The large wound resulting healed but slowly, so that when we saw her there was a healthy-looking granulating surface, six inches by three, cicatrizing slowly at the edges. Mr. Heath, under whose care the patient had now passed, transplanted two bits of skin from the arm on to the raw surface, and fastened them down with isinglass plaster. Six days later, the plaster being removed, this note was made—

Sept. 13th.—One bit is firmly united, and is increased to nearly double its size. With the aid of a magnifying glass, a fine blue line is seen surrounding it, having the same appearance as that of the edge of a healing ulcer. The other piece looks dead, the plaster having fallen off during one of the dressings a day or two ago. The wound is now dressed with a sulphate of copper lotion, as the granulations are very protuberant.

17th.—The piece on the left side is still increasing; the portion of cutis removed is of the same size; the growing epithelium around it has the appearance of a light blue areola, about a quarter of an inch in diameter. That on the right side is growing slowly, it not being more than double the size of the original piece.

By Sept. 29th the whole surface was all but healed, but the cancer was returning in it in the form of softish nodules.

The second case was a man, J. C., aged forty, admitted under Mr. Heath's care with old eczema of a severe kind, affecting both legs, accompanied with chronic ulcers. One ulcer was five inches broad, and reached nearly round the left leg in the lower third, slowly healing at its edges. Four pieces were transplanted from the arm, the largest being the size of a split pea. Of these the House-Surgeon affirmed that one increased to the size of a penny in three weeks. The first three bits were grafted on Sept. 7th, and the fourth two weeks later. When we saw him again, on Oct. 21st, the large ulcer had entirely healed, save for two or three little specks. The experience at this Hospital seems to be that the larger bits are more satisfactory in their results than very small ones.

The Middlesex Hospital.—Mr. Lawson has treated two cases on this plan. In one—a woman with a large ulcer on her leg—excellent results were obtained with pieces of skin the size of fourpenny-bits. She has now been out of the Hospital some time. The second case, of which the following is a note, has only just been discharged:

J. B., a man, aged twenty-four, had been suffering with ulcers on the

legs for three years, the sores sometimes healing over, but they had never been so bad as at the date of admission. On Sept. 22nd, upon one of these ulcers, which had now assumed the appearance of a healthily granulating sore, two and a half inches square, Mr. Lawson grafted a bit of skin nearly as large as a sixpence, taken from the arm. During the first week the fate of the bit seemed uncertain, but by the seventh day it was clearly living, and more vascular-looking than before, and it thenceforward continued to spread rapidly. When we saw the man again, on Oct. 18th, the ulcer had completely healed, but the transplanted skin was readily discernible as a slightly elevated island of natural-looking integument in the midst of a surface of glazed cicatricial tissue.

Mr. Arnott has also had three cases of this kind at the same Hospital. The first was one of special interest, as the nature of the case made it desirable to obtain as natural and healthy tissue as possible in the cicatrix.

K. J., a good-looking, healthy girl, aged twenty-two, was admitted on Sept. 13th, with keloid disease of the skin, reaching from the middle line of the throat across the right side of the neck. The painful and unsightly nodules had grown in the substance of the scar, resulting from a severe burn received five months previously. On Sept. 14th, Mr. Arnott excised the diseased portion, dissecting wide of the nodules and so necessarily removing much skin. An attempt to procure adhesion of the edges so as to leave a linear cicatrix, having failed, Mr. Arnott waited for two weeks until the wound was healthily granulating, and then, on Sept. 28th, grafted two bits of skin, each larger than a split pea, taken from inside the arm, and secured them in the usual manner with transparent plaster. Owing to the difficulty of keeping the part at rest, the plaster was much disturbed, and one of the pieces slipped to the edge of the wound, where it adhered, and speedily became incorporated in the healing margin, the other keeping its position and growing nicely. When the favourable issue of the first trial was clear, Mr. Arnott transplanted two more bits in like manner, and the patient being more successful in keeping the neck still, both of these answered admirably. On Oct. 20th, the surface was almost entirely covered over with natural supple cicatricial tissue, in which no trace of morbid thickening was perceptible, the grafted bits being here, too, still clearly visible.

The second case was that of a man, F. P., aged twenty-eight, admitted Oct. 11th, with a very large sloughing ulcer inside the lower third of each leg. Each ulcer was about the size of the man's open hand, and both were equally foul and unhealthy-looking. Both sores were poulticed, the man kept in bed with legs raised, a mild lotion substituted for the poultice on the third day, and on Oct. 15th, Mr. Arnott grafted three small bits of skin from the arm on to the centre of the ulcer on the left leg. These having become fixed, and showing evidence of growth, on Oct. 19th three more were put on the same ulcer. These also took firm hold, and the ulcer is now healing rapidly. The corresponding sore on the opposite limb is being dressed in the same way, but without any grafting being practised upon it, so that the gain in time by the new method may be more clearly ascertained.

The third case is one in which Mr. Arnott removed a large lipomatous tumour from a man's loin. The wound took on an unhealthy action at first, and a portion of the skin sloughing, a wide gap nearly ten inches long was left in the side. After this surface was covered with florid granulations, on Oct. 21st, Mr. Arnott removed a piece of skin from the side of the chest, nearly an inch long and a third as wide, and placed it in the centre of the surface, where it seems likely to grow as well as the smaller pieces that have been employed.

Charing-cross Hospital.—Mr. Bellamy has employed this mode of treatment on several occasions for the healing of old ulcers amongst his out-patients. In almost all the cases which have again come under his observation, the little piece of skin has "taken;" in others, the patients have either removed the dressing, or have applied remedies of their own, and so destroyed the graft. Mr. Bellamy generally waited until he had a tolerably healthy surface to deal with before transplanting; but, although he considers this very desirable where it may be done, yet he has had some cases in which the small graft adhered and grew, in ulcers looking far from healthy. He has always removed very small portions of skin as grafts.

Mr. Bellamy has only once employed the method on an in-patient, an example of "workhouse ulcer," in which there was also a syphilitic taint.

The patient was a man, aged twenty-seven, sallow and cachectic-looking, and with a history of constitutional syphilis. He had long been troubled with what he had been told was a varicose ulcer, and there were large dilated veins in the neighbourhood of the sore. With rest in bed, and appropriate treatment, these subsided; and when the sore had been got into a fairly healthy-looking condition, Mr. Bellamy took three bits of skin, each about half the size of a grain of wheat, from the unsensitive skin of the knee, and distributed them over the surface. At the end of a fortnight, one of these bits had spread radially to about the size of a sixpence, and the others had also increased to a less degree, all three appearing to be uniting and inducing contraction towards them of the edges of the wound, which had now assumed an extremely healthy appearance.

Guy's Hospital.—Mr. Durham has been practising skin-grafting in four cases, and has met with much success; but these are not yet ready to be published in detail, as we believe it his intention to do when they are completed. His latest trial consists of an important modification of the method, and can perhaps scarcely be termed simple grafting. On Oct. 25th, Mr. Durham removed with the knife a large lupoid ulcer from the back of a girl's hand, and then, partially separating four portions of skin from the margin of the wound, he turned these in towards the centre, like the spokes of a wheel, and strapped them in their new position. The portions of skin so treated being not entirely separated, the procedure resembled rather what is so constantly done in plastic operations about the face. Of course we are not yet able to give the result of this experiment.

[A method somewhat similar to this was long ago tried by Professor Frank Hamilton, of New York. He separated a portion of skin on one leg, and applied it, yet adhering, to an ulcer on the other, maintaining

the two legs in close apposition until the skin had taken root in its new soil. Of course, the cramped position the practice entailed militated against the success of the operation. As Mr. Durham's practice is based on one system of rhinoplasty, so is Dr. Hamilton's on the other.—*Ed. M. T. and G.*]

Seamen's Hospital, Greenwich.—Mr. Johnson Smith, Surgeon to the Hospital, reports the following cases:—

J. V., aged fifty-two, a corpulent, pallid, and gouty subject, and a brewer's drayman by occupation, was admitted on May 14th, with a small lacerated wound in front of the right tibia, associated with much bruising of the surrounding soft parts. On the second day after admission the integument of the injured leg became acutely inflamed, and the subcutaneous connective tissue swollen and infiltrated with fluid. These symptoms were followed by sloughing, which commenced at the seat of the wound and then spread slowly along the inner and posterior surfaces of the limb, destroying in its progress both integument and subcutaneous tissue, and undermining the tendo-Achillis. At the commencement of July the whole of the slough had been thrown off, and the leg presented a large, healthy-looking, and granulating ulcer, which measured five inches from above downward, and four and a half inches from side to side. On July 10th, a portion of epidermis, about one-eighth of an inch in diameter, was taken from the integument of the dorsum of the foot, and implanted in a slight incision made in the centre of the large ulcer. On the third day no traces of the graft could be observed, and it was thought that the thin scale of epidermis had been carried away in the purulent discharge. On the seventh day, however, there was a marked depression at the seat of the operation, and around this a pinkish zone of commencing cicatrization. At the end of the third week there could be seen in this region an islet of soft and perfectly sound skin, quite circular, and of the size of a sixpence. On July 24th, two fresh transplantations were made of minute pieces of epidermis. These were simply placed upon the surface of the ulcer, and covered by pieces of strapping. Each of these was surrounded at the end of the week by increasing margins of scar pellicle. On July 30th, a fourth transplantation was made in the upper portion of the ulcer, the lower two-thirds of which had been almost wholly covered over by the union of the three islets proceeding from the three previous grafts. On Aug. 17th the patient was discharged from the hospital. The whole wound was then covered over by a large scar, soft and elastic, painless, and freely movable over the subjacent soft parts. The exact seat of each transplantation was marked by thickening and elevation of epidermis, surrounded by a distinct fossa in the scar tissue.

J. H., aged twenty-six, was admitted on Sept. 16th, 1870, with sores on the right leg. About three months previously he had received a severe injury of the limb, which was followed by erysipelas and extensive destruction of soft parts. When admitted he presented, in front of the right leg and occupying the lower half of this surface, a healthy and ruddy ulcer, measuring four and a half inches from above downwards, and five and a half inches from side to side. There was also a smaller ulcer on the posterior surface of the limb. From the date of admission to Oct. 15th, ten minute pieces of epidermis were placed

upon the surface of the larger sore. Of these transplantations eight succeeded, and resulted in the formation of rapidly growing islets of sound scar tissue. Two grafts were taken from the skin of an African; these soon lost their black tint, and the tint of the pellicles surrounding them was of the usual pink or bluish-pink colour. On Oct. 24th, all the islets formed by transplantation had coalesced, forming a large bridge of scar tissue, extending from the upper to the lower margin of the ulcer, and measuring three inches in length and two in width.

One of the nicest cases we have seen was in the Devon and Exeter Hospital, under the care of Mr. Kempe. The patient was a man, aged twenty-eight, who had been in the hospital since February, with an ulcer of the right leg. This proved obstinate and would not heal, so a small portion of skin was removed from the forearm and engrafted on the middle of the ulcer. It took admirably, and five weeks after, when we saw the case, it formed an island of healthy skin half an inch in diameter, occupying the centre of the ulcerated surface.

Mr. Lawson Tait also reports to us a successful case of ingraftment of cuticle; he says—T. S., aged nine, was severely burnt on the chest about the end of December last. A large surface of skin was completely destroyed; and when I saw her first, in May, there remained a raw surface with large flabby granulations. The edges were raised, and though every possible effort had been made by nature to heal the wound by contraction, it still remained the size of the palm of a hand. Every variety of dressing had been tried without any success in diminishing its extent. Mr. G. D. Pollock, of St. George's, was kind enough to make me acquainted with Reverdin's process of ingraftment of cuticle, and on July 5th I transplanted three small pieces, one the size of a split-pea, and two more rather less than half that size. On the 7th the largest of the three was unfortunately removed along with the dressings by the carelessness of the dresser. This piece I carefully examined, and found its under surface covered by large, soft, nucleated cells, intimately adherent to it, indicating beyond doubt that its vitality had been thoroughly established. On the 10th the sites of the other two ingraftments showed signs of activity, the granulations there being raised above the general surface of the wound, like patches of urticaria, about three-fourths of an inch in diameter. On the 15th, two more ingraftments of minute shreds of cuticle were made, but by the 19th one of them had disappeared, while the other gave decided indications of activity. Up till Aug. 1st, the three raised patches showed no signs of drying, but on the 15th minute surfaces of dry cuticle were apparent. After this, the case was placed under the care of my friend, Mr. Lorraine, of Wakefield, who writes to me that the case is progressing most satisfactorily, that the cicatrization is extending from the three points of ingraftment, and that the wound has much diminished in extent.

ART. 158.—*On the Treatment of Ulcers by Transplantation of Skin.*

By N. C. DOBSON.

(*British Medical Journal*, November 19.)

At a meeting of the Bath and Bristol branch of the British Medical Association, held at the Royal Hotel, College Green, Bristol, on October 27th, Mr. Dobson read a paper on the treatment of ulcers by transplantation of skin. He attributed the origin of this method of treatment to M. Reverdin, and the introduction of it into this country to Mr. Pollock. Mr. Dobson pointed out the method which he adopted in his cases, stating that he took small pieces of skin from the upper arm, not larger than split peas; that he divided these on his thumb-nail into five, seven, or twelve pieces, as the case might require; and grafted these into the granulation into incisions, which he made previously with a sharp lancet, using the point of an ordinary sewing-needle for the purpose of removal from the nail, and of insertion into the incised granulations. He detailed fully two cases. In one, the whole thickness of the integument on the front of the abdomen had been destroyed by the explosion of fireworks in the trousers-pocket. The wound healed with a circumferential cicatrix three inches in diameter, which enclosed an open granulating surface eight inches long and five broad, which for six months did not make a single advance towards recovery, but healed perfectly in twelve weeks under transplantation. He had removed eight pieces of skin in all, which yielded, by subdivision, forty insertions, several of which he lost from improper dressing. The other case detailed was an old varicose ulcer of ten years' standing. He related several other cases. In a granulating surface, after loss of the entire integument of the leg from phlegmonous erysipelas, he had made, ten days ago, twelve transplantations of pieces of skin not larger than a pin's head, eleven of which were growing vigorously. The same vigorous growth must not be expected in chronic ulcers as occurs in healthy florid granulating surfaces. He showed how skin from a younger person was more vigorous than in an old person when transplanted into the same ulcer. He had seen, in a very healthy granulating surface, a piece of skin not larger than a canary-seed produce an island of cicatrization as large as a florin; but the average growth was about the size of a sixpence. He spoke of the immense value of transplanting skin in a practical point of view, and showed to the meeting two cases as evidence of this.

ART. 159.—*On Epidermic Transplantation.*

By M. MARC SÉE.

(*Gazette Médicale de Paris*, No. 26, 1870.)

A very interesting case in its bearings upon physiology and surgical therapeutics has been communicated by M. Marc Sée to the *Société de Chirurgie*, the patient being one on whom epidermic transplantation had

been practised with success. The fore-arm had been injured in a chaff-cutting machine, and the soft parts of the anterior and external surfaces of the limb torn and bruised; the bones were not injured. Dressings of pure alcohol were applied, and the wound, after the elimination of the gangrenous superficial parts, was covered by granulations. M. Sée then took from the internal surface of the arm two small flaps of epidermis, detached by means of a lancet, and applied them to the projecting parts of the wound, where they were maintained by a simple dressing. A few days after, a fresh transplantation was made by placing over the surface of the wound particles of epidermis obtained by scraping with a lancet the cutaneous surface of the arm. On the same day M. Reverdin, hospital interne, to whom we owe the discovery of this variety of animal transplantation, applied over the wound several small epidermic flaps taken from the leg, and which were maintained in their place by a strip of diachylon. On the following day these different transplantations had succeeded, and subsequently the epidermic islets by extending and uniting produced cicatrization of a considerable part of the wound.

The process of the proliferation of epidermic cells replaces in the parts invaded by the epidermic islets the process of suppuration, so that the march of cicatrization is considerably accelerated.

M. Sée is not the only surgeon who has verified the experiments of M. Reverdin; M. Alphonse Guérin has obtained similar results.

It was discussed at the *Société de Chirurgie*, whether in raising the epidermic flaps intended for transplantation one did not detach at the same time some cells of the papillary bodies. This is a very important point, for, according as this is resolved in the negative or affirmative, the epidermic graft will or will not be distinguished from other kinds of graft. With regard to this, there is less interest in knowing if the cells of the horny layer take the part of proliferating under the conditions in which they act, or whether the epidermic flap, in order to engraft itself, ought to include the cells of the malpighian layer. In either case one deals with true epidermis; that is to say, with a membrane or a tissue which receives neither vessels nor nerves, and consequently this kind of transplantation cannot be compared to the operations known as autoplasmic. The question will be decided, if with a simple sowing over the surface of the wound of epidermic cells obtained by superficial scraping one can produce islands of cicatrization, as well as with the transplantation of thicker and more extensive portions.

Epidermic transplantation, if it be definitely demonstrated on all these points, will have, as we have before remarked, and as was stated with reason by M. Verneul, very great importance from the point of view of surgical practice by affording a means of obtaining cicatrization of certain wounds or certain rebellious ulcers, and of regulating the localities which succeed in autoplasmic operations. We will add that it supplies a very powerful support, and a sort of demonstration of the theory that has been proposed by us to explain the transmission of infectious or contagious maladies, transmission which we believe to be due to the transplantation on a healthy individual of the changed but still living anatomical elements proceeding from an affected individual.

ART. 160.—*On the Removal of Subcutaneous Tumours without Hæmorrhage or Loss of Skin.**

By HENRY LEE, F.R.C.S.

(*Medical Times and Gazette*, September 24.)

The author has been in the habit for some time of removing small tumours by indiarubber thread. He finds that the pressure of the thread will rapidly, by a process of linear mortification or of ulceration, cut through the base of a tumour. This principle may be applied to the surface as well as to the base of any growth that may have to be removed, and is peculiarly applicable to vascular tumours of the neck and face. A crucial line of ulceration is first made through the skin by the continued pressure of indiarubber bands or thread. Needles are then inserted below the flaps of skin thus produced, and the skin is dissected back, from the centre towards the circumference, by the pressure of the indiarubber. The base of the tumour is then cut away in the same way, so that the whole of it is enucleated without the aid of a knife. The process goes on much more rapidly than might be expected; and it is comparatively safe, as the indiarubber thread always, on account of its elasticity, remains tight. The circulation cannot consequently be re-established in a part once strangulated, and so far the danger of blood-poisoning is avoided.

ART. 161.—*On Osseous Regeneration after Sub-periosteal Articular Resections.†*

By M. OLLIER.

(*Gazette Hebdomadaire*, No. 31, 1870.)

"I wish to-day to add a new and, I hope, a definitely conclusive proof to those that have already been brought forward by me in favour of osseous regeneration in man after sub-periosteal resections of joints.

"The facts that I have the honour to submit to the Institute as a complement of my experimental researches upon the regeneration of bone, and which have been collected from operation patients who died some time after resection of the elbow, will go to demonstrate, in a manner still more rigorous than observation upon the living, the justifiability of my experimental deductions.

"Osseous regeneration takes place in man as in the mammalian animals upon which I have performed experiments. It obeys the same laws, operates under the same conditions of age and of media, and fails from the same circumstances. In certain cases only does it take place in a more regular manner in man, because with him, better than

* Abstract of a paper read at a meeting of the Royal Medical and Chirurgical Society, June 14.

† Communicated to the Académie des Sciences by M. Claude Bernard.

with animals, one can keep up the state of immobilization necessitated by the consecutive treatment.

"The two subjects, the autopsies of whom enabled me to verify these propositions, succumbed, the one at eighteen months, the other at a year, after resection of the elbow. The former was aged nineteen years and the second forty-nine. The reproduction was more abundant and more regular in the younger patient; there was not only a reconstruction of the articulation through an approximation of the divided surfaces, but likewise a regeneration of the osseous extremities; as the humeral tuberosities and the olecranon.

"Eight months after the resection my patient was found in good local and general circumstances. There remained but a small fistulous canal, which discharged from time to time a little purulent serosity. Active movements of extension, flexion, pronation, and supination had been re-established, and were perfected day by day.

"Pulmonary phthisis then declared itself, and from this time until the end of his life the patient led a miserable existence. Several articulations (the shoulder, the hip), previously healthy, were attacked by fungous swellings and caries, the articulation formed after resection of the elbow underwent the same morbid changes and suppurated.

"The following are the principal details of the autopsy relating to the form and relations of the reproduced osseous extremities:—

"The part that was most regularly reconstructed was the inferior extremity of the humerus. Viewed on its anterior surface it presented a triangular form. Its summit was confounded with the diaphysis of the bone, and its angles, terminated by prominent prolongations, represented the epicondyle and the epitrochlea. The lateral tuberosities measured nearly four centimetres from their summits to their bases, which were continuous with the diaphysis. The whole of the enlarged portion of the humerus at its lower extremity having been removed by the operation, there could be no possible doubt regarding the origin of the tuberosities found at the autopsy. Although the new portion was regularly continuous, and seemed at first sight to be confounded with the old portion, it could be made out from its roughened appearance, and from the absence of the smooth and compact layer which covers normal bone.

"The ulna terminated in an olecranon of new formation about three centimetres in length, which formed with the old portion of the bone an obtuse angle open in front in such a manner, that the limits between the old and new portions could be easily recognised. This new olecranon formed also a hooked process which, directed backwards between the newly-formed tuberosities, enclosed this portion of the extremity of the humerus, and assured the solidity of the articulation.

"Internally to the part where the olecranon articulated with the posterior surface of the humerus could be seen, upon the new inner condyle, a well-formed groove occupied by the ulnar nerve, as in the normal condition.

"As to the radius, it terminated in a swelling formed by the addition of fresh osseous substance, but without any reproduction of a true head and neck.

"All these newly-formed masses were covered by a thick periosteum.

"The various muscular insertions, which had been detached at the time of the operation, were established in their normal relations. The muscles were pale and atrophied by reason of the long repose to which they had been condemned during the last months of life, but all their insertions, even that of the anconeus, could be distinctly recognised. The biceps was inserted upon the apex and borders of the olecranon, and acted upon the ulna alone. The brachialis anticus was inserted upon a coronoid projection of new formation.

"In the centre of the new portion of the humerus, between the two lateral tuberosities, was found a fibrous, hard, but still unossified mass, which was covered in front by some lobules of fat. The articular surfaces were not covered by a layer of cartilage. The return of suppuration in the elbow had not only hindered the completion of the reparative processes, but had led to the kind of disorders which is to be met with in chronic suppurative arthritis; the interior of the joint was, for nearly the whole of its extent, lined by a more or less luxuriantly granulating membrane.

"The second operation subject in whom I was able to make out by an autopsy the real degree of osseous regeneration, died from albuminuria one year after the operation. Notwithstanding the bad conditions in which he had been placed, his health having been unfavourable except from the second to the sixth month after the operation, I found on the side of the humerus two thick, prominent, lateral masses disposed as in the preceding case; one downwards and outwards, the other downwards and inwards, so as to form a kind of mortise, which prevented any lateral movement of the radius and ulna. The external tuberosity was particularly well developed; it was in a single piece, and measured four centimetres; the internal tuberosity was completed by an independent osseous nucleus.

"The ulnar nerve was lodged in an osseo-fibrous groove behind the internal tuberosity.

"The olecranon was of an irregular form, and continuous with the tendon of the biceps by a series of independent osseous nuclei.

"The reproduction of these large humeral tuberosities seemed to me to be the more remarkable from the age of the patient, which was forty-nine years. According to my experimental researches, one cannot count, in adults, upon more than a very imperfect generation.

"All the insertions of the muscles, detached at the time of the operation, were re-established in their normal relations on the newly-formed osseous masses. They were found as regular as those in the former case.

"These results are extremely demonstrative in favour of my operative proceedings, which rest upon the integral preservation of the periosteocapsular sheath, that is to say, of all the fibrous parts, the periosteum, tendon, and ligaments, which surround the osseous extremities and bound the articulations. The periosteal portion of the sheath serves for the regeneration of the osseous extremities; and in cases where this regeneration cannot take place on account of the advanced age of the patient, a new joint is still formed between the cut surface, thanks to the preservation of the means of union and of the organs of movement. The muscles continue to act intermediately through the periosteal sheath upon those bones which it is their function to move."

ART. 162.—*Case of Tetanus.*

By GEORGE H. B. MACLEOD, M.D., F.R.S.E., Professor of
Surgery in the University of Glasgow.

(*Glasgow Medical Journal*, November.)

An interesting case of this cruel affection presented itself in May. The patient, a labourer, was a strong, healthy man of twenty-nine, who had his second toe bruised by the fall of a piece of iron. The skin was unbroken. Eleven days after the injury, and while the toe was yet swelled and painful, he took trismus, and when he was brought to the Royal Infirmary on the thirteenth day, he had fully developed tetanus of a very violent form, chiefly affecting the muscles on the posterior surface of the body. The limbs and neck were very rigid, the "risus sardonicus" marked, violent pain at the xiphoid appendix, the abdominal muscles stiff like boards, and such pain, occasioned by the flashes of spasm, that he cried out loudly. The trunk was, during the height of the affection, bathed in offensive perspiration, and a miliary eruption was present for two days over the chest and abdomen. He suffered early from retention of urine, and constipation, and when, by the aid of croton oil (five drops being required), his bowels were moved, the discharge was tarry and offensive. The respirations ranged from 24 to 28, and the pulse from 82 to 98, both being accelerated during the presence of a spasm. The teeth could be slightly separated, and he suffered much from the adhesive sputa which so generally give annoyance in this affection. His mind never wavered, and he was always able to swallow fluid food. He was very ill for several days, but by the end of ten days he had fairly begun to improve—the crisis being passed—and, finally, he made a complete recovery in about a month from the time of his admission. In the treatment of this case Dr. Macleod relied almost wholly on feeding. The patient got the most nourishing food, and also stimulants freely, on the ground that the hope of recovery rests on keeping up the vigour till the disease has run its course and exhausts itself. It has been Dr. Macleod's lot to see a good deal of this horrible affection during the war and also in civil life, and all his observation has tended to show that nothing in the form of a specific is known to us, or is likely to be found. In very acute cases he has never known any treatment of use. Chloroform occasionally assuages the spasms temporarily. In sub-acute and chronic cases our whole hope must lie in sustaining the strength and courage, while we employ drugs merely to regulate the secretions. It is well known how many supposed specifics—some used empirically, many suggested by physiological reasons—have been employed and lauded by their authors, yet the average mortality has not as yet been diminished. It was from this conviction that Dr. Macleod stopped the administration of the calabar bean, which his house-surgeon had begun in the above case. Dr. Macleod thought, from the form of attack, the length of the period of incubation, and the native vigour of the patient, that he had a good chance of recovery, and Dr. Macleod was unwilling to ascribe the result to an erroneous cause. Some years ago great faith was put in Indian hemp, in the Glasgow Hospital, and a

long list of alteratives, antispasmodics, and sedatives have had their trial. Opium Dr. Macleod has seen largely pushed, and from all came about the same average success, showing how little any of these medicines contributed to the result. So soon as the acme of the disease is passed and the attacks become less violent, we have in any case good hope of recovery, but previous to that we must oppose the accession by supplying aid to the strength. Fortunately, in the forgoing instance, the patient continued to swallow and digest fairly. Every day life was upheld improved his chance. We must in each case remove every source of excitement by keeping the patient in the dark and quiet, and in an equable temperature. Clear out the bowels, feed well, and use—as was done in the above case, with much benefit in procuring sleep—full doses of chloral. The bladder must be relieved, and the thirst quenched, beyond this the less the patient gets the better. The trifling nature of the local lesion in the case related above was remarkable. It required very little attention. In most cases of traumatic tetanus, however, it is necessary to employ such local measures as will soothe or allay irritation, and remove constriction. Incisions, and in some cases even amputation, may be called for; but in all cases the condition of the wound must be carefully considered. The popular notion regarding the tendency of injuries of the foot to produce tetanus would appear to obtain countenance from this case, but inexorable statistics have abundantly disproved that idea.

ART. 163.—*On Tetanus.*

By DAVID W. YANDELL, M.D.

(*The American Practitioner.*)

Dr. Yandell lays down the following conclusions in regard to tetanus:—

1st. That traumatic tetanus occurs in males in the proportion of four to one, and tends to recovery oftenest in females.

2nd. That tetanus is most fatal in persons under ten years of age; that it is least fatal between ten and twenty years.

3rd. That traumatic tetanus usually supervenes between four and nine days after the injury, and these cases represent the largest mortality.

4th. Recoveries from traumatic tetanus have been usually in cases in which the disease occurs subsequent to nine days after the injury.

5th. When the symptoms last fourteen days, recovery is the rule and death the exception, *apparently independent of the treatment.*

6th. Of all the forms of tetanus, that appearing in the puerperal state is the most fatal.

7th. That chloroform, up to this time, has yielded the largest percentage of cures in acute tetanus.

8th. The true test of a remedy for tetanus is its influence on the history of the disease. (a) Does it cure cases in which the disease has set in previous to the ninth day? (b) Does it fail in cases whose duration exceeds fourteen days?

9th. That no agent, tried by these tests, has yet established its claims as a true remedy for tetanus.

ART. 164.—*On Bullet-Wounds.*

By Prof. BILLROTH.

(Wien. Med. Woch., No. 49, 1870, and The Lancet, November 26.)

Professor Billroth considers that balls very seldom remain buried in the soft parts without giving rise to suppuration, and thinks that the lodgment of bullets for months and years without exciting abscess is very rare. Extraction should always be attempted except the balls have penetrated into any of the three cavities of the body. As regards the extremities, the operation should always be tried, the best instruments being the dressing or polypus forceps of different lengths. Billroth has tried the American bullet-forceps, but neither he nor his colleagues have found any advantage from its use. The author has heard the probe of Nélaton, with a porcelain knob, highly spoken of by German medical officers, but they found that the porcelain button should not be larger than a good-sized pea. Professor Billroth observes, finally, that experience in the extraction of ball is far preferable to the most ingenious instruments in unpractised hands.

ART. 165.—*On the Reduction of Dislocations.*

By WARREN GREENE, M.D.

(Boston Medical and Surgical Journal, March 3.)

Professor Greene, in this paper, protests against the common doctrine that the great impediment to the reduction of dislocations consists in the tonic contraction of muscles; and maintains, on the contrary—1. That the main opposing force is the untorn portion of the capsular ligament. 2. That in all efforts at reduction the primary object should be the relaxation of the untorn portion of this ligament. 3. That occasionally the small size and peculiar shape of the rent in the capsule, peculiar conditions of the nervous system, or muscular contractions, may constitute the major forces with which we may have to deal; but that these cases are so extremely rare as not at all to invalidate the general rule. In estimating the relative importance of ligamentous and muscular resistance to reduction, we have to bear in mind that—1. The shafts of long bones are, as a rule, surrounded by groups of muscles quite as powerful in their combined action as are those which envelope their articulation. 2. In fractures of the shaft, with displacement of its mobile fragments, whose sharp and rugged ends are constantly provoking muscular spasm, which increases its own cause, the amount of "contraction" is at least equal to that resulting from displacement of its smooth and round articular extremity, which occupies a fixed position. 3. In the various (not impacted) fractures, the cases are very rare in which the surgeon is not able to make sufficient extension to overcome muscular contraction even without anæsthetics—his main difficulty being to retain the fragments in proper apposition; while in dislocations effective extension is the ordinary mode—often requiring the force of several men, or of the compound

pulleys. 4. Profound anæsthesia annuls muscular resistance ; but while it allows the fragment of a fractured bone to be replaced with the utmost facility, it oftentimes fails to diminish in any appreciable degree the difficulty of reducing dislocations, the most powerful extending force, if applied in the ordinary manner, still being required. 5. It frequently happens that dislocations occurring in strong men, where there is no evidence of extraordinary muscular injury, are reduced with great ease by the rules laid down in the books, without anæsthetics, and when the muscles are seen and felt to be in a state of positive resistance. Professor Greene gives, in detail, an account of his investigations as to the production of the various dislocations on the corpse when denuded of its muscles.

ART. 166.—*On a Rare Disease of the Joints.*

By SAMUEL JACKSON, M.D., Emeritus Professor of the Institutes of Medicine in the University of Pennsylvania.

(*American Journal of the Medical Sciences*, July.)

Dr. Jackson describes several cases of a rare form of disease, resembling rheumatoid arthritis, which have fallen under his observation in the course of his practice. The peculiarity of the affection is, that it is confined to the ligamentous tissues, whilst the general health of the patient is not at all disturbed. Dr. Jackson has not been able to find any similar form of the disease described ; and when in London he consulted Sir Benjamin Brodie in regard to it, who confessed that it was entirely new to him.

ART. 167.—*The Treatment of Enlarged Lymphatic Glands.*

By FURNEAUX JORDAN, F.R.C.S.

The numerous modes of treating enlarged glands are remarkable chiefly for their want of success. The method Mr. Jordan proposes, if carefully carried out, he has never known to fail. The ordinary enlargement of lymphatic glands is due to inflammatory action. By far the most efficient remedy in inflammation of any organ is, Mr. Jordan writes, counter-irritation, if only it be established in the *proper locality* and to a proper extent. A blister will cure bursitis when nothing else will, and inflammation of a bursa does not differ from other inflammations. In enlarged glands, as in abscess, carbuncle, boils, and erysipelas, the best locality for counter-irritation is *not over* the inflammation, but around it or adjacent to it—in short, in an independent vascular region. In enlarged cervical glands, a large patch of iodine irritation at the back of the neck, which may be prolonged below the glands, will certainly prove successful in a short time.

A shot bag, as heavy as can be tolerated, should be applied over the glands at intervals during the day, the patient being for this purpose in the horizontal posture. Many cases might be cited. One, a repre-

sentative one, under the care of an impartial and competent observer, will suffice. Dr. Hickinbotham, of Neshells, had under his care a man with enlarged cervical glands, which for three years resisted the careful trial of every known treatment. Dr. Hickinbotham then, adopting Mr. Jordan's views, established a patch of counter-irritation at the back of the neck. In three weeks all enlargement had disappeared.

One of the advantages of counter-irritation is this—it gives certain and immediate relief to pain. The persistent tormenting pain of a carbuncle, for instance, may be instantly relieved by a ring of counter-irritation with its transitory smarting.

ART. 168.—*On Hospital Gangrene.*

By WM. R. E. SMART, M.D., C.B., Inspector-General of Hospitals, R.N.

(*The Lancet*, October 1.)

Experience inclines Dr. Smart to depend on carbolic acid as a preventive and on the permanganates as a curative agent. Should the surgeon, however, not have these means at hand, much can be done with other means. The general principles to be adopted are: 1st. To improve and maintain ventilation as thoroughly as possible. 2nd. To disinfect the atmosphere with chloride of lime in vessels placed under the beds, or with chloride of zinc solution on wetted cloths hung up in the wards. 3rd. To support the strength of the wounded by the best diet to be obtained for them. 4th. To obviate contagion by discarding sponges, tow, &c., in dressing the wounds; for which a clean earthen vessel containing water, a caoutchouc bottle, a pail to receive the washings and foul dressings, and a glass syringe for the medicated lotions, are the simplest and the best appliances. 5th. To give opium and dietetic stimulants freely to the infected. 6th. As it is a local malady, every germ of the disease must be destroyed, together with all the tissues that are affected by it, and a line of demarcation formed beyond those tissues; and therefore, as a rule, wherever there are signs of this terrible *pourriture d'hôpital*, the surgeon must not hesitate to lay wounds open again, and to apply strong fluid caustics boldly, not refraining from injecting them into the surrounding tissues, and to have recourse to the actual cautery when the surfaces involved are large, and widely or deeply affected, or where fluid caustics have failed.

In illustration of the advantages of such treatment, Dr. Smart selects from his Case-book two instances, in one of which strong solution of the chloride of zinc was used where the scalp had become affected in a compound fracture of the skull, and in the other the actual cautery was very freely employed to obliterate the diseased action in the deepest part of a stump formed above the insertion of the deltoid.

ART. 169.—*On the Treatment of Ulcerated Neoplasms by Gastric Juice.*

By Dr. A. MENZEL.

(*Gazetta Medica Italiana Lombardia*, 1870; *Gazette Hebdomadaire*, No. 28, 1870.)

This article gives reports of two cases treated by Dr. Menzel, and likewise some historical researches on the above subject, which will be consulted with interest, and will show that the employment of gastric juice is not novel.

In fact, in 1785, Jean Senebier proposed for the first time the employment of gastric juice in surgery. He alluded to the experiments of Furine, of Geneva; and Foggia, of Turin. This author insisted upon the properties possessed by this fluid of healing gangrenous wounds. To these experiences Spallanzani added some observations. The gastric juice of carnivora was, according to him, more active, and could be more readily preserved; the gastric juice of the herbivora ought, he states, to be acidulated before its employment.

In the same year, Bassiano Carminati published the results of numerous experiments in which had been studied the action of gastric juice upon numerous animals, and also on man. The effect of the juice was, according to the author, surprising in eight cases of inveterate wounds. Fibrous tissue was softened, callous borders reduced, and purulent and sanious discharges were transformed into an inodorous suppuration of a healthy character. The gastric juice separated the diseased from the healthy parts. It never caused hæmorrhage. A blennorrhœa of the lachrymal sac, with ulceration, was cured by injections of the juice; and also a case of interphalangeal articular caries of the foot. An ulcerated epithelial cancer was cleansed and ameliorated.

Carminati employed gastric juice both externally and internally, and found that it had good results in pains, contusions, œdema, indigestion, intermittent fever, &c. This author attempted to fabricate an artificial gastric juice, by macerating in salt water some pieces of veal. According to him, very good results were obtained, which explains the vulgar practice of applying flesh to gangrenous wounds.

In 1790 Gampietro Terras related some experiments confirming those of Furine.

In 1799 Sir E. Home studied the effects of gastric juice. The employment of the agent was suggested to this author by Dr. Harris, a naval surgeon, who had spoken favourably of the good results obtained from its employment in scorbutic ulcers. Home recommended gastric juice in the treatment of all gangrenous ulcers.

In spite of these good promises the medicinal agent fell for a time into oblivion. However, in 1848, Rust spoke of gastric juice, not denying its efficacy, but holding that it was inferior to other irritant applications, such as nitre, powdered carbon, camphor, &c. This author cites several authors on the subject. Harness, Steidele (1788), Spallanzani (1785), have in fact spoken of the employment of gastric

juice. Cases of the employment of gastric juice in surgery have recently been reported by Nussbaum, Tansini, and Pagello.

The following are the two cases reported by Dr. Menzel:—

CASE 1.—Anastasia F., aged twenty-nine years, was admitted under the care of Prof. Billroth on Dec. 17th, 1868. For five years she had been affected with fierce intermittent fever. In April, 1868, she noticed at the back of the neck a tumour of the size of an almond. This increased rapidly, and ulcerated. On the admission of the patient there was a rounded knotty tumour, extending on the left side from the occipital tuberosity to the spinous process of the sixth cervical vertebra, and outwards as far as the mastoid process of left temporal bone, and the corresponding sterno-mastoid muscle. This growth presented, at its most elevated part, an ulcer of the size of a shilling. The skin was traversed by enlarged veins. The analysis of the blood proved that the proportion of white to red blood corpuscles was one to eight. Billroth diagnosed a malignant lymphoma; lymphosarcoma of Fische.

On Dec. 18th, Billroth removed the tumour. The operation was a very laborious one. On Jan. 18th, 1869, the wound had cicatrized, but about the 28th of the month another gland in the neighbourhood of the scar commenced to swell. The development of this tumour was so rapid that by the 11th of February it had attained the size of a man's head. At this period injections were made of tincture of iodine, chloride of gold, and carbolic acid. The tumour had extended over the whole of the back part of the neck, from the occiput to the trunk, and was much ulcerated.

It was then decided to apply gastric juice, but to limit the treatment to two ulcers only, one of these being five centimetres in length, and two centimetres in width; the second, two centimetres long by one wide. Application was made, twice in the day, of charpie saturated with filtered gastric juice, which was covered by a second piece of charpie saturated with a weak solution of hydrochloric acid. In six days the wounds had increased to double their extent, and the fœtor had entirely disappeared. The wound was at first covered by a grey pultaceous crust, leaving on its detachment a red and very vascular wound.

In the course of the second week the wounds increased in size, and at the end of fifteen days the application of gastric juice was discontinued, the dressings of diluted hydrochloric acid being still kept up. The wound continued to increase until it was four times its original extent.

CASE 2.—Helmer Martino, aged sixty-five years, was admitted on Aug. 2nd, 1869. He had had, for three months, a tumour over the right angle of the jaw, which at last reached the size of the fist. On May 20th this growth was extirpated. The tumour extended into the neighbouring tissues, and the inferior part of the parotid, the sterno-mastoid muscle, and the submaxillary gland, were invaded by the neoplasm. It was necessary to tie the external carotid above and below the tumour. Microscopical examination showed that the tumour was a medullary cancer, rich in cells, with large nuclei and oval nucleoli.

On Oct. 1st the wound was covered with healthy granulations, except in the central part, which was pale and raised. The suspected relapse was demonstrated by the microscope.

A pad of charpie impregnated with gastric juice was then applied over the relapsing tumour, and the whole of the wound was covered by charpie saturated with a weak solution of hydrochloric acid (1 part to 100). The cancer, under this application, became covered by a slightly-adherent and yellowish-grey false membrane. The application of the gastric juice was continued during five days, and the final result was that the cancer did not

project beyond the rest of the wound. The patient then wished to leave the hospital. Fifteen days later it was made out that the wound had healed, with the exception of the central part. The patient died in December, from an intermittent malady.

According to Dr. Menzel, one may sum up the results of these two experiments in two conclusions:—

“The gastric juice of the dog, applied to ulcerated neoplasms (lymphoma, cancer), produces a false membrane of a yellowish-grey colour, and the ulcerations lose their bad odour.

“It seems that the gastric juice does not attack tissues that are rich in vessels, but that its destructive effect is restricted to dead tissue, and tissues about to die. Dr. Menzel considers this remedy as an antiseptic superior to most modern remedies, because it does not substitute for a putrid odour another odour which is not less disagreeable.”

Gastric juice will not destroy neoplasms; its action is less profound than that of caustics. It does not fulfil the same indications as caustics. We cannot, therefore, keep up the illusion that we possess an agent capable of destroying neoplasms, and at the same time, of respecting the surrounding healthy parts.

The juice is a powerful modifying agent in ulceration, and also an antiseptic agent. This is a property from which profit may be derived. Unfortunately, of all the agents which can produce like effects, this is the most difficult to prepare, and the most costly. It is desirable to know whether the same effects might not be produced from an artificial gastric juice, which can be more readily preserved and employed.

ART. 170.—*On the Laws which Preside over the Development of Syphilis.*

By M. FOURNIER.

(*Annales de Dermatologie et de Syphilographie*, No. 5, 1870.)

The following is an abstract of a lecture delivered by M. Fournier, at the Hôpital de Lourcine, and reported by M. Percheron:—

“M. Fournier states that it has been proved, both by experiment and by sound clinical observation, that syphilis obeys in its general development certain fixed rules to which might be given without presumption the name of *laws*.

“These laws are the following—

“1. Syphilis has no spontaneous genesis. It always results from *contagion*—from the material penetration of a special virulent substance into the organism.

“2. The first appreciable phenomenon which results from this contagion is never manifested until after a lapse of time, more or less prolonged, constituting a veritable *incubation*.

“3. The first appreciable phenomenon which results from the contagion, or the artificial introduction of the virulent material into the

organism, is always manifested at the very place at which this material penetrated, at this place and no other.

“4. The primary affection which results *in situ* from the contagion always remains isolated and solitary for a certain time, during which it constitutes, or seems to constitute, the *unique expression* of the malady.

“5. It is only after this period that to this apparently quite local affection succeeds an explosion of other multiple and varied symptoms, which differ essentially from the initial affection in the fact that they are not, like it, localized to the point where contagion took place, but *disseminated* over all parts, *generalized* over all organs, and *extended* to all systems.”

M. Fournier then discusses each of these laws; with regard to the first, he states that “syphilis is not considered in our day the resultant of individual morbid causes; it is not originally elaborated in the organism; it does not result from functional excess, from the wearing out of organs, the deterioration of the system, and from constitutional defects slowly and insidiously produced in the organism; it does not attack the patient in the same manner as pulmonary tuberculization, darte, cerebral hæmorrhage succeeding vascular lesions, or vesical infarctions. No; it is always, and in all cases, the resultant of some accidental cause arising from without—the *derivative of a contagion*. Of this there can be no doubt, it is confirmed by daily experience, and it would be superfluous to insist upon this point.”

The following remarks were given on the second law concerning incubation:—

“After clinical contagion a certain period elapses, during which the future syphilitic subject has reason for believing that he has escaped. The length of this period after clinical contagion, as after experimental inoculation, varies in different subjects. Sometimes it is indeed very short (ten or twelve days); most frequently it attains a duration of twenty, twenty-five, or twenty-eight days, and is sometimes even prolonged to thirty, thirty-five, and forty days. Here then, as in all virulent affections, there are unknown conditions which augment or diminish the duration of the incubation.

“In the second place the mean duration of this incubation is the same as in cases of artificial inoculation—that is to say, from about three to four weeks.

“The duration of the syphilitic incubation may certainly pass beyond the mean period which I have already mentioned as being the most common. It is *often* thirty days. It sometimes exceeds this time, and reaches thirty-three, thirty-five, and forty days. I believe that I have met with a case in which it reached to two and a half months; M. Guérin also has cited a case in which, in all probability, it was seventy-one days.

“But these two cases may be put on one side, as they are quite exceptional, and are not furnished with sufficient guarantees as to their authenticity.”

In discussing the third law, M. Fournier makes the following observations:—

“We see a patient who has contracted syphilis quite recently, I will suppose about a fortnight before. What does he present? A chancre

at the point where the contagion acted. And what else? Absolutely nothing; we see a chancre and nothing more. Examine the patient from head to foot. Auscultate him, percuss him, inquire into the state of all his functions, you will find no pathological change in him. The chancre then is at this period the unique manifestation of the contagion; it in itself constitutes or seems to constitute the whole malady. But for our own experience, which enables us to foresee the future, we might think that this patient would remain free from all ulterior manifestations."

M. Fournier then discusses the fifth law:—

"We will see," he states, "after some weeks, that to the local sign of contagion will be added other manifestations, very varied both in form and situation: these are eruptions on the skin—syphilides, erosions, or ulcerations of the mucous membrane of the mouth, vulva and anus; pains in different parts—limbs, joints, &c.; glandular engorgements; various lesions of the tendons, muscles, and periosteum; falling off of the hair, and many other morbid phenomena.

"These new symptoms, whatever form they may take, differ essentially from the primary affection in the fact that they are not, like it, localized to the spot of contagion. Far from that, they are to be met with over all parts of the body. They are disseminated over all systems. Their domain seems to be the whole body. Their variety has no equal save their generalization. It is to these symptoms that has been given the name of *consecutive, secondary, constitutional, or general symptoms*.

"This evolution and succession of symptoms in the order which I have just formulated is constant, as has been proved both by carefully observed clinical facts and by the results of experimental inoculation.

"Does syphilis invariably, and in all possible cases, follow the course just indicated? Is there no exception to the preceding laws?

"Yes; there are some exceptions to these laws. But these exceptions are very few. There are two at the most, or rather we have two orders of them. And moreover these exceptions do not occur by chance; they may be foreseen and determined, and, as we shall see, do not break the rule. One is certain and very real; the other is still hypothetical.

"The first relates to cases of hereditary syphilis. You know that syphilis enjoys the sad privilege of being transmitted by heredity. This has been proved by too many examples. Thus an infant born of syphilitic parents is very often syphilitic. But in these unfortunate young creatures who inherit syphilis from their parents, the disease does not proceed in the same manner as when it has been acquired by personal contamination. It does not commence in a local affection and then arrive at the order of phenomena which we style constitutional. No, it commences at once with this latter order of phenomena. These infants are from the very commencement affected with eruptions, mucous syphilides, coryza, and visceral lesions. And this may be readily understood, for the little patients have not acquired syphilis by contagion but have received it from their parents through hereditary transmission, as they might any morbid germ or any physical or moral resemblance. They receive the disease from their parents at the period when these

are actually affected, and they take it *ready-made*, if I may so speak, and at the period of the general manifestations.

“The second exception is altogether special. I have qualified it as hypothetical, because indeed it has not yet been absolutely determined. It is stated that an infant born syphilitic may have communicated the disease to its mother during its sojourn in the womb. Let us consider this well. Let us suppose a syphilitic husband and a healthy woman. This woman becomes pregnant, and her infant is born syphilitic. Very well, this infant, this foetus may, say some, react upon its mother *in utero*, and communicate to her the disease which it has acquired hereditarily from the father. This is what has been stated to occur by certain authorities, and one ought to recognise the fact that this mode of transmission is neither opposed to physiological laws nor irrational in itself. In cases of this kind the syphilis would commence in the mother, not by a local symptom—a chancre, but suddenly—*emblée* by general symptoms. This results from the facts brought forward in support of this mode of transmission. And there is nothing extraordinary in this, for what will be produced under these conditions will not be a contagion similar to that of the venereal act; but a transmission operating through the placental interchanges between the infant and the mother, resembling in every respect those operating between the mother and the infant. It will be, if I may so express it, a kind of reversed heredicity, operating from the child to the mother. And consequently, as in the infant which inherits maternal syphilis the disease is inaugurated by general symptoms, so in the mother who receives syphilis from the child when *in utero*, symptoms of the same kind will mark the commencement of the malady.”

M. Fournier concludes his lecture with the following remarks:—

“I have demonstrated to, and convinced you, I hope, that syphilis proceeds in its development according to certain rules, which I have formulated and attempted to demonstrate to you. This evolution constitutes, if I may so speak, a kind of drama, which can be subdivided into a series of successive acts and entr’actes in the following manner:—

“First Act.—*Contamination*; the virus penetrates by a certain proceeding into the organism.

“First Entr’acte.—Apparent repose of the organism. *Incubation*. No appreciable indication of the disease yet presented.

“Second Act.—Formation at the point where the virus has penetrated and at this point only, of a lesion called the *primary affection*, which constitutes at this moment the *unique expression* of the disease.

“Second Entr’acte.—Fresh apparent repose of the organism. *Second Incubation*. The primary lesion still remains the *sole* phenomenon by which the infection is manifested.

“Third Act.—Explosion of multiple and disseminated symptoms beyond the seat of contagion, the so-called *consecutive or secondary* symptoms. This is the period of the apparent *generalization* of the disease.”

ART. 171.—*On the Particular Mode of Transmission of Syphilis from the Nurse to the Child in Suckling.*

By Dr. A. DRON.

(*Annales de Dermatologie et de Syphilographie*, No. 3, 1870.)

The case considered by Dr. Dron was the following:—A nurse, previously in good health, suckled for a time a syphilitic infant. After this child had been removed she remained free from disease for a long time, and then another child, in perfect health, was given to her to suckle. During this latter process, without the woman having been exposed to a fresh contagion, there was developed upon her breast a syphilitic chancre, which was transmitted to another infant confided to her care. These facts are explained by the duration of the incubation, which may extend beyond a mean term of twenty-five days, and reach over a period of six weeks or even two months. The author quotes in proof of this two series of observations; in the first, comprising twelve cases, the mammary chancre presented itself at a more or less remote period at the cessation of suckling, and the nurses during this stage of apparent health have been enabled to take charge of a second child. In the second series, comprising five cases, the nurses, after the death of the syphilitic child, have taken another in charge, and the syphilitic chancre developed upon the breast during suckling has been transmitted to the child.

ART. 172.—*The Treatment of Syphilis by Repeated Inoculations of Matter derived from Venereal Sores: so-called Syphilization.*

By FREEMAN J. BURNSTEAD, M.D., Professor of Venereal Diseases in the College of Physicians and Surgeons, New York.

(*American Journal of the Medical Sciences*, July.)

Professor Burnstead, in an extended article on syphilization, asks "*Is syphilization to be recommended for general adoption?*" From what he has personally witnessed, and from the accounts of others, he believes that it is a very effective method for the treating of syphilis. He cannot say that he is fully convinced of the very small number of relapses after "syphilization" alleged by its advocates; not that their honesty is doubted, but results so favourable as this should be confirmed by others less enthusiastic and less interested, before demanding implicit belief. Should further examination and experiment show that only twelve or fourteen persons out of every hundred infected with syphilis, and treated by repeated inoculations, ever exhibit any return of the disease, this method will have established very high claims in the treatment of syphilis, whenever circumstances will permit its being carried out, as it may be in our hospitals and other eleemosynary institutions. But judging from what he has seen of the practice, nothing less than a very strong probability, in case he had syphilis, that the disease, if

left alone, or if treated by mercury, would terminate disastrously, could induce him to undergo the personal discomfort, and for the length of time, which has been witnessed in the patients at Charity Hospital. In short, he is obliged to subscribe to the opinion expressed by Messrs. Lane and Gascoyn, that "syphilization is not a treatment which can be recommended for adoption."

ART. 173.—*On the Early Stages of Syphilis as affecting the Skin.**

By EDGAR A. BROWNE, M.R.C.S.

(*Liverpool Medical and Surgical Reports*, October.)

The existing confusion in the description of syphilides is caused by no untrustworthiness or lack of ability on the part of the observers, but by want of agreement in method. If there is one method with any pretence to a wide acceptance, it is the faulty method of Willan, which, however useful in its way, is totally inadequate to effect the distinction between what is essential and what accidental in the syphilitic diseases of the skin; and unless this distinction is very rigidly kept in view, any real simplicity is impossible. That an essential simplicity does exist may be assumed, for the more we study disease the stronger is our conviction that it is, like all physical phenomena, under the dominion of law, from which deviation may be apparent, but is certainly impossible. Syphilis has been called a Proteus, but is really in its evolution as orderly as other diseases. By reason of its exceptionally chronic course, its typical development is liable to be modified and obscured by accidental circumstances; but when we consider that it is found in all climates, attacks persons of all ages, and apparently without excepting any temperament or diathesis; it becomes almost a matter of wonder, not that it changes its appearance so much, but that it changes so little. The evolution of syphilis is accompanied by a series of actions which do not altogether correspond with the useful and practical division of primary, secondary, and tertiary periods, but are nevertheless equally plainly marked. 1. Stage of inoculation and incubation, in which the symptoms are *nil*. 2. Stage of progressive activity, characterized by pyrexia, an exanthem, and special local lesions. 3. Stage of relapses or latency. 4. Stage of destructive sequelæ. 5. Stage of perverted or anomalous nutritive activity.

Syphilis, like other zymotic poisons, when introduced into the body gives rise to a systemic disturbance, which has been accurately described as syphilitic fever. It is sometimes so slight as to escape observation, especially in men. Besides the symptoms of pyrexia, it is usually accompanied by an eruption. This, the macular, erythematous, or roseolar syphilide, is sometimes so faint as easily to escape detection. In private practice, where the patients keep themselves closely under medical surveillance, it is almost always seen. In a number of cases,

* Abstract of a Paper read at a Meeting of the Liverpool Medical Institution, Session 1869-70.

sufficiently well recorded to seem accurate, it appears as the earliest symptom in 57 per cent. It may be said to follow, *as a rule*, the inoculation of the syphilitic poison; the instances in which it is not developed are very rare, and correspond with cases of scarlatina without rash. Two varieties are described, but they are pathologically identical in their nature. In its mechanism, it resembles the rashes of typhus, measles, &c., and is essentially a hyperæmia of the skin, presumably dependent upon inhibitory paralysis of the vaso-motor nerves. It is in nowise inflammatory, and passes away in due course without treatment. It sometimes appears, and is recorded as papular. The papules are formed by the papillæ of the skin, simply as a result of the excessive blood supply, appear and disappear with great rapidity, and differ in their constitution from the other papules.

This, the first series of rashes in syphilis, whether the actual mischief be a large or small inoculation or slightly raised sore, and resembling roseola vulgaris or papula, with a feeble form of desquamation, are formed by one, and only one, pathological process, identical in its intimate nature with that of other exanthems.

The next series may coincide or follow, but never precedes, the exanthem. Their existence depends upon the special local lesion of syphilis, a circumscribed, adhesive inflammation. The portion of tissue attacked is limited in its extent, the action indolent, with little tendency to resolution and none to suppuration, the lymph effused considerable in quantity—the first manifestation at the site of inoculation—where it constitutes the papule or hard chancre; it afterwards attacks the skin, mucous membranes, iris, &c. In the skin this localized inflammation, beginning in a hair follicle, a sebaceous gland, or a papilla, forms small papules, and constitutes a lichen. As the papules enlarge they become confluent, and form little tubercles (this is a common variety); or the breadth of the area of inflammation is altogether out of proportion to its depth, beginning as a bright red spot, extending laterally, sometimes attaining considerable size, after a time fading, when the well-known coppery colour is developed, and the epidermis round the edge of the disc is thrown off as fine white scales. The distribution of this series assumes an infinity of forms by combination, &c., and is described as the lenticular syphilide. The same action takes place on a larger scale, and the epidermis is thrown off the whole surface as a flake, or in scales. This is called syphilitic lepra—a bad name, for if lepra is ever directly caused by syphilis, which is scarcely proved, it is not at this stage. The eruption is not really squamous, but essentially papular; and the desquamation is an exaggeration of the natural process by which the cuticle is thrown off and renewed, caused by the long continuance of the inflammation without any tendency to suppuration or ulceration. If any of these forms occur on mucous membranes, or where the skin is constantly moist from perspiration, a “mucous tubercle” is the result; it differs from the other papules only in the accident of its situation. The pustular syphilides are a variety of the preceding group, complicated by the accident of suppuration, which is dependent, not upon the syphilis, but upon the inability of the recipient tissues to withstand the stress laid upon them, and to inflame without passing into a distinctive stage, and forming pus. Syphilis causes

lymph to be thrown out, but it does not form lymph, nor does it confer upon a system which is deficient in this respect power to do so for itself; and when this is the case, the usual destructive results of inflammation, even to sloughing, may be expected. The vesicular syphilide is very rare, and it is doubtful whether it ever depends upon syphilis. Vesicles can be produced by outward agencies in the skin of syphilitic subjects, but such eruptions must be carefully discriminated from those actually caused by the poison. The pigmentary syphilide is not an elementary form at all, but the result of a previous state of hyperæmia. The paper concluded with some remarks upon treatment, in which it was maintained that in those cases where any medicine at all was needed, mercury was the only drug with any pretence to being a specific.

ART. 174.—*A Practical Treatise on Acupressure.*

By JOSEPH C. HUTCHISON, M.D., of New York.

In this treatise are passed in review the principal methods of applying acupressure, illustrated by experiments on the lower animals, and observations on the arteries of man—the pathology of the subject—together with a synopsis of cases.

The treatise concludes as follows:—

“Considering that the entire reliability of acupressure for the arrest of surgical hæmorrhage has been fully proven, let us inquire if it has any advantages over the ligature.

“1. Secondary hæmorrhage is not so liable to occur with acupressure as with the ligature. There are certain constitutional states, such as the scrofulous diathesis, and other morbid conditions, marked by an aplastic state of the blood, which predispose to secondary hæmorrhage. But this accident takes place far more frequently as the result of local causes, (1) from too rapid ulceration, or (2) too extensive sloughing of the vessel at the time of the ligature’s separation. On the other hand, where acupressure has been employed, the internal surfaces of the artery have merely been placed in contact, no ulceration or sloughing ensues. Again it is often possible to compress several vessels with a single needle, hence secondary hæmorrhage would be less likely to occur than if a ligature had been applied to each vessel separately.

“2. Acupressure, as was predicted by Simpson, has proved to be the most expeditious way of restraining hæmorrhage; and, with a little experience in its practice, the easiest which has yet been devised, and the surgeon requires no assistant, as in using the ligature.

“3. Acupressure may sometimes be employed where it would be difficult or impossible to seize the vessels with the forceps, and draw them out of their sheaths, so as to allow the application of a ligature.

“4. Not only can two or more arteries be closed by a single needle, but the venous hæmorrhage may be controlled at the same time with the arterial; thus preventing, it may be, the absorption by the open mouths of the veins of noxious fluids from the surface of the wound.

“5. The needle can be removed in a few hours, or in two or three

days, leaving the interior of the wound free from all foreign bodies, while the ligature is separated by a slow process of ulceration and sloughing, with the accompanying suppuration: and hence the primary union of wounds must be greatly diminished when the ligature is employed.

"6. Acupressure can be practised with safety upon arteries which are so much diseased that they are too brittle and friable to bear the strain of a ligature. In cases of aneurism, where the artery is diseased for some distance above the sac, the vessel may be closed by an acupressure needle, at a point where it would be inexpedient to apply a ligature."

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 175.—*On a New Method of Effectually Remedying the Defect of Hare-lip.*

By WILLIAM STOKES, Jun., M.D., Surgeon to the Richmond Surgical Hospital, Dublin, &c.

(*Dublin Quarterly Journal*, August.)

The object of the operation which Dr. Stokes describes, is to prevent the occurrence of two deformities often left after the treatment of hare-lip—viz., a notch on the border of the lip, and a vertical groove. For this purpose, Dr. Stokes first makes an incision across the lip through its entire thickness, on each side, extending as far as two or three lines from the red border. Having applied *serres fines* to the ends of the flaps, to make them hang down and to arrest hæmorrhage, he next, if the cleft do not extend into the nose, cuts naturally with scissors through the entire thickness of the lip at the upper angle. He then makes an incision on each side, from the upper point of the vertical incision down to that first made, just outside the edge of the red border, taking care to avoid wounding the mucous membrane of the lip. A quadrilateral flap is thus formed on each side. The two flaps are turned back; their broad raw surfaces brought into apposition; and a spear-pointed needle is introduced at the lower end of the incisions from one side to the other. A second needle, higher up, may be necessary; or the surfaces may be brought together by fine entomologists' pins. The surfaces of the flaps may be approximated by the figure of 8 suture. The lower points of the incisions first made through the lip on the two sides are brought together by sutures of Chinese silk. Dr. Stokes has operated in this way in three cases, of two of which he gives drawings.

ART. 176.—*On two Cases of Excision of Tonsil, followed by Hæmorrhage.*

By WHARTON P. HOOD, M.D.

(*The Lancet*, October 29.)

In the case here recorded, hæmorrhage lasted for several hours, notwithstanding the application of a variety of styptics, such as solid nitrate of silver, ice, perchloride of iron, &c. Suddenly the patient said, "I feel very sick;" and sick he was to a very considerable extent, vomiting large quantities of partially digested food and coagulated blood.

When the sickness had ceased, Dr. Hood fully expected to have an increase of the bleeding, and looked rather anxiously into the mouth at the cut surface; but his surprise was both great and agreeable when he found, instead of an increase, a complete arrest of the hæmorrhage had taken place.

A short time ago Dr. Hood states he was sent for to a patient in whose case both tonsils had been excised. The operation had been done at 1 P.M.; and when he saw him at 5 P.M., he learned that slight bleeding had continued until about 3 P.M., and after taking some food it had increased to such an extent as to alarm him. He tried various styptics, for a short time without any controlling effect. Recollecting the effect of vomiting in his previous case, Dr. Hood gave him a scruple of sulphate of zinc in a little water. He was not sick for a quarter of an hour; at the end of that time he brought up little else than blood and water (he had sucked a good deal of ice). He retched for a short time after the stomach was emptied, and when the retching had passed off Dr. Hood examined the throat, and saw that the bleeding had stopped, as in the first case.

Dr. Hood calls the attention of others to the use of an emetic under these circumstances, so that its efficacy may be tested when opportunity offers.

He presumes that the hæmorrhage is checked in these cases by purely mechanical action—viz., pressure of the pillars of the fauces and the surrounding muscles on the tonsils.

ART. 177.—*Case of Blood Tumour of the Head.*

By GEORGE H. B. MACLEOD, M.D., F.R.S.E., Professor of Surgery in the University of Glasgow, and Surgeon to the Royal Infirmary and Lock Hospital.

(*Glasgow Medical Journal*, November.)

Dr. Macleod relates the following case, as it appears to him a most interesting one in a pathological point of view:—A child, aged two and a half years, was admitted into hospital five months after she had fallen and struck the right side of her head violently on the

ground. A considerable (blood) tumour shortly appeared, and after some days gradually diminished, but never wholly disappeared. Two months after the accident, what remained of the "bump" began to enlarge, and as it became very prominent, she was brought to the hospital. The right parietal bone was found occupied by a very hard resistant mass, which measured four inches long and fully two inches broad. It was very firmly fixed, and the scalp would not slide over its surface; nor was the skin changed in appearance. The child was in good health, and had no pain in the tumour. Dr. Macleod was told that it was enlarging rapidly, and consequently removed it the day after her admission. Dr. Macleod cut down through the tumour till he got below it, and then enucleated it, in two portions, from the surrounding structures. The operation was rapidly done under chloroform, there being very free bleeding *from the substance of the growth*. The tumour was found to lie on the bone *below the perieranium*, and to get looser and less organized in its structure as it approached the bone, in contact with which it was just coagulated blood. On the scalp side it had all the appearance to the eye of firm, dense fibrous tissue, and was closely adherent to the tissues lying over it. It sloped from its centre to the edges, so that its outer surface was convex.

This case was a very curious one, as from a blood effusion there arose an enlarging tumour, which became to the hand hard as cartilage, and had all the appearance of being organized. In the first instance, it was in all respects, except the cause and mode of appearance, an example of a very uncommon injury—"Sub-pericranial Cephalhematoma," of which Valleix and Seux have given us the best description, as occurring in new-born children. In its further history and appearance, it seemed to bear out the old idea of tumours formed from blood effusions, did we not know, from sufficient evidence, that such transformations do not occur, and that the occasional formation of tumours at the seat of injury admits of a totally different explanation. The fibrinous matter which remains after the absorption of the serum of blood clot, sometimes assumes, as we know, a very hard, almost bony consistence, but the continued growth of the mass on Dr. Macleod's patient's head, and its marked vascularity, were features which rendered the case especially worthy of note.

ART. 178.—*A Case of Removal of a Penny which had been impacted for Six Years in the Larynx.**

By JOHN CAMERON, M.D.

(*Liverpool Medical and Surgical Reports*, October.)

G. M., when ten years of age, was playing with a penny, which accidentally slipped into his throat. A probang was passed very shortly afterwards, but without effect. After about six months he

* Abstract of a Paper read at a Meeting of the Liverpool Medical Institution, Session 1869-70.

came under Dr. Petrie's care, and at that time there was considerable tenderness around the larynx, and some swelling, but little or no difficulty in swallowing, and there was no abnormal appearance visible internally. The voice was weak and shrill; there was loud stertor and snoring at night, much cough, and free expectoration.

Under treatment these symptoms considerably abated, and for the next two years the laryngeal affection was nearly stationary, but the patient was evidently losing strength and flesh. In about another year it became evident that his lungs were becoming affected, and that he was suffering from incipient phthisis. Dr. Cameron saw him in consultation about six months afterwards, but attention was almost entirely directed to the chest, little notice being taken of the laryngeal affection, or the now almost forgotten accident with which its origin was associated. Under treatment he improved greatly, so much so that he took two voyages to the Mediterranean, and afterwards went to Brazil, whence he returned, two months before the paper was read, in very good general health.

In January of the present year Dr. Cameron saw the patient, who was now suffering only from symptoms referrible to the larynx—viz., occasional cough, with a peculiar, harsh, ringing sound, stridulous breathing, feeble hoarse voice, and scanty expectoration, occasionally tinged with blood. On each side of the larynx there was some swelling, and forcible compression caused slight pain. The patient swallowed without difficulty or pain. The peculiar cough and stridulous breathing induced Dr. Cameron to examine the larynx with the laryngoscope. A good view of the vocal chords and other parts was obtained, and in addition there was seen a bright metallic-looking line at the lower part of the image, losing itself on each side and below in the surrounding parts. This was evidently the edge of the penny imbedded in the posterior wall of the upper cavity of the larynx. It was determined to remove it, and a proper pair of forceps having been constructed, Mr. Minshall, in the presence of Drs. Petrie, Cameron, and Little, removed it with some difficulty, and with the use of considerable force. This has been followed by gradual decrease of the swelling round the larynx, improvement of the voice, and relief to the breathing and cough. The penny was thinner, and of a dark greenish-black colour; its surface was eroded, having, when examined with a lens, a honeycombed appearance, and it must have lost about eighteen grains in weight.

ART. 179.—*On Primary Cancer of the Larynx.**

By Dr. DESORMEAUX.

(*Gazette Hebdomadaire*, No. 28, 1870.)

As cancerous tumours of the larynx are most frequently, if not always, constituted by epithelial tissue, which offers more chances of recovery than tissues which are veritably cancerous, one should not

* Communicated to the Académie de Médecine.

hesitate to operate upon them when their complete extirpation seems possible.

The symptoms observed in the patient, the progress of the malady, and above all a laryngoscopic examination, enable the surgeon to attain a very probable diagnosis; and supposing that there be an error of opinion as to the nature of the morbid tissue at the time that a tumour of the larynx threatens the patient with suffocation, and that it is impossible to destroy this by the natural passage, there is an indication for resorting to a more efficacious operation.

This operation is laryngotomy, in which the surgeon should not hesitate to open the organ as widely as possible in order to act with greater certainty upon the tumour, which it is very important to destroy thoroughly.

The gravity of laryngotomy is very slight; the fear of impairing the voice, and even of rendering the patient aphonic, ought not to deter the surgeon when he is about to attack a disease which must necessarily cause death if allowed to proceed.

When the affection has commenced in the larynx, one may attempt extirpation so long as the lesion does not pass beyond the superior opening of the laryngeal cavity, and so long as it has not escaped from the cartilaginous box which for a long time opposes a barrier to it. This latter stage of the affection is known by the increase in size of the organ, which takes at the same time an irregular form, and an abnormal consistence. This contra-indication would scarcely exist when the question of an operation is considered for the first time, for, before arriving at this point, the tumour would have produced asphyxia, unless a preceding operation has assured liberty of respiration.

When the symptoms just enunciated lead the surgeon to recognise that it is impossible to extirpate completely the disease, or when engorgement of the neighbouring lymphatic glands has been made out, the surgeon should limit his practice to the performance of tracheotomy in order to avoid suffocation, and to prolong the days of the patient.

After laryngotomy, and the destruction of the tumour, the surgeon should leave a canula in the trachea for some time, in order to assure himself that there is no relapse. The opening thus maintained will allow him to explore the organ from below upwards, and to cauterize any points which may give rise to doubt. Finally, this proceeding will simplify a second laryngotomy if it be necessary to have recourse again to this operation.

ART. 180.—*A Case of Broken Neck, Spinal Cord almost severed at Level of third Intervertebral Cartilage.*

By J. FAYRER, M.D., C.S.I., F.R.S.E., Professor of Surgery and Senior Surgeon, Medical College Hospital, Calcutta.

(*Medical Times and Gazette*, November 26.)

B., a stout, healthy-looking Hindoo labourer, aged twenty-five, was admitted into the Medical College Hospital on June 17, 1870. Five

days previously he and another man were carrying a heavy beam of wood, the ends resting on their heads. His companion suddenly let one end of the beam drop; his end then fell, and in doing so, gave his head and neck a violent wrench backwards. He fell to the ground immediately, completely paralysed below the neck. In this condition he was carried home, where he remained until the fifth day, when he was brought to the Hospital. The abdomen was tympanitic, and the bladder fully distended with urine.¹ He says that until the fourth day he had made water, and his bowels had acted, but not since. His statements are probably not very reliable. His bowels may have acted, and urine may have dribbled from an over-distended bladder. His pulse was regular and firm, about 80; tongue moist, but coated; temperature apparently natural; sixty-four ounces of urine were removed by catheter, and an aperient draught ordered by the admitting officer. Respiration was diaphragmatic. His face wonderfully little indicated his grievous condition. There was a depression in the cervical region, but no crepitation or lateral displacement could be detected. He could move his head and neck, and spoke very clearly, describing how the accident occurred. Nearly all below the clavicles sensation and motion were gone. The point of a sharp instrument drawn round the body was felt across the upper part of the pectorals and deltoids in an irregular line, on the back it descended rather lower. He seemed painfully conscious of his miserable condition, and begged for relief.

Towards the evening his temperature rose to 104° . This varied from 101° to 104° , until June 22, when it rose to 104.5° in the morning, and 106.5° in the evening, and on the 23rd, the day of his death, to 107° .

The pulse varied, but never exceeded 85. The respiration was hurried, being 36 to 40 per minute. At first a saline diaphoretic was given, and the urine was 100 to 110 oz. daily. This gradually diminished to eighty ounces daily. The saline was discontinued. Morphia was given, to soothe the pain in the neck and allay the restlessness. He took soup and other fluid nourishment, and remained quite sensible until the morning of June 21, when he became delirious. The breathing became more difficult, from accumulating mucus in the bronchial tubes and the upward pressure of the distended abdomen. He sank at 1.20 A.M. of June 23.

The urine was regularly drawn off; it remained clear, but was very watery. Sp. gr. 1010—neutral; neither excess of phosphates nor mucus, neither albumen nor sugar. There was persistent partial priapism.

Autopsy.—The body, that of a vigorous, muscular man. Viscera were healthy, except that the lungs were hypostatically congested, and the tubes full of mucus; all the other organs, whether thoracic or abdominal, were healthy. On examining the spinal column, it was ascertained that, in the violent backward wrench, the third intervertebral cartilage had been torn across, or rather torn away, from the upper surface of the body of the fourth cervical vertebra. The laminae of the third cervical vertebra were broken, and depressed upon the cord. On removing the medulla spinalis and its covering, there was no apparent injury, but on laying open the theca a small spot of coagulated blood was found corresponding to the fractured laminae, and just above it the

cord had been compressed and softened, practically cut in two. This was very evident on pouring a gentle stream of water on the cord; it washed out the softened nerve substance, leaving a deep groove, as though a cord had been tightly tied round it. This injury was exactly beneath the depressed portion of the laminae, and must have been caused by their edges.

This case is interesting both in a physiological and pathological point of view.

The instances are very rare in which men have survived such accidents more than a few hours. In this case the patient lived twelve days after the injury.

It is impossible to conceive anything nearer to instant death than this man must have been on receiving the injury. The spinal column was compressed, physiologically severed, just below the origin of the fourth cervical nerve, as the third vertebra with its intervertebral cartilage, was torn from the upper surface of the fourth.

The phrenic nerve must then have been seriously compromised, as its third origin from the fifth cervical nerve was thus severed from the two other origins, and it is difficult to believe that the fourth cervical nerve could altogether have escaped, as the injury to the cord was close to where it is given off, and if so, the chief origin of the phrenic must have been much interfered with. With this damaged internal respiratory nerve, and with such feeble aid as it received from the muscles descending to the upper part of the thorax, and supplied by nerves given off above the fourth cervical, life was sustained for twelve days. Death occurred on the twelfth day, from exhaustion and gradual failure of the respiration. The paralyzed abdominal and thoracic muscles, unable to resist the pressure of the gas-distended intestines, and the diaphragm pushed up into the thorax, with the rapidly increasing congestion of the lung, and accumulating mucus in the bronchial tubes, soon terminated his existence, though not until long after the time when such cases usually terminate fatally.

His sufferings, notwithstanding the complete paralysis below the neck, were great, and his vivid consciousness of his distressing condition was not the least painful part of them. He was for some days peculiarly intelligent, and no one would have supposed, from the appearance of his face, that his state was one of such perfect death in life. Towards the last, as the blood became imperfectly aerated, and his energies exhausted, he became delirious, and was unconscious when death occurred.

ART. 181.—*Two Cases of Stricture of the Œsophagus.*

By MORELL MACKENZIE, M.D.

(*Medical Times and Gazette*, July 16.)

At a meeting of the Clinical Society of London, on May 13th, Dr. Morell Mackenzie read two cases of stricture of the œsophagus. The first case was that of a man, aged fifty-eight, who had experienced difficulty of swallowing for four or five years. He had suffered no pain,

but the difficulty had gradually increased, so that at the time of application he was quite unable to do more than chew meat, swallowing the juice and rejecting the solid residue. Liquids could only be taken in sips. He weighed seven stone twelve pounds. The patient had never had syphilis. Bougies of increasing sizes were passed for twelve months, at the end of which time he was able to eat meat by cutting it small. He is now able to eat any sort of food without any sense of obstruction, and his weight has increased nearly two stone and a half since he was first seen. The second case was to illustrate the advantage of an "œsophageal dilator" invented by the author. The instrument consisted of a hollow gum-elastic tube, the end of which was made of hard india-rubber, with four slits in the sides. Inside the whole length of the tube was a piece of wire with a bolt at the lower end, and when the bougie had been passed through the stricture the bolt was pushed down so that the india-rubber portion was dilated four sizes larger. The advantages were—(1) great gain of time, an important feature in cases where the prominent symptom is inanition; (2) the greater ease and certainty with which strictures can be dilated than with conical bougies. The patient had dysphagia caused by swallowing soap lees eleven years previously. At first a No. 5 bougie could be passed with difficulty through a very tight stricture opposite the sternal notch. At the end of three months a No. 11 was easily introduced. The patient then discontinued treatment for a year. The dilator was then used, and in a month a No. 16 could be passed with ease. Dr. Mackenzie recommended this instrument for non-malignant and traumatic strictures.

ART. 182.—*Optic Neuritis.*

By BRUDENELL CARTER, F.R.C.S.

(*The Lancet*, November 8.)

At a meeting of the Clinical Society of London, on Oct. 28th, Mr. Brudenell Carter described three cases of optic neuritis that had come under his notice at the South London Ophthalmic Hospital. In the first case the patient was a young woman, apparently in good health, and the right eye only was affected. Its vision was reduced to qualitative perception of light; and an active mercurial treatment was employed, under the suspicion, which could not be substantiated, that the disease was syphilitic. Speedy recovery took place, and normal central vision was restored; but in one direction there was remaining effusion, and a corresponding blind spot in the field, at the date of the paper. The second case was that of a woman, thirty years of age, who became blind in a few days when in the eighth month of her eighth pregnancy. After delivery her sight began to return; and three weeks after, when she came to the hospital, she could read No. 20 of Jaeger with the left, and No. 16 with the right. At that time there was well-marked optic neuritis in both, with scattered patches of effusion in the choroid. Iron and iodide of potassium were given, and the right eye slowly improved, so that it can now read No. 2, the left remaining almost stationary.

Both in the optic discs and in the choroid extensive atrophic changes had taken place. The subject of the third case was a boy, eight years old, who fell from the roof of a shed to the ground. Shortly afterwards his left eye began to protrude, and became perfectly blind, while he suffered from severe pain in the head and from sleeplessness. The ophthalmoscope discovered optic neuritis. Treated by iodide of potassium and iron, with chloral hydrate at night, the pain disappeared, and the eye returned to its natural position in the orbit; but the neuritis passed into total atrophy, and not even perception of light returned, the other eye remaining unaffected. In a few observations upon these cases, the author referred to the fact, first noticed by Dr. Hughlings Jackson, that a considerable degree of optic neuritis may be present in certain cerebral affections without impairment of vision. The cases related seemed to show that, besides a traumatic neuritis and a well-known form produced by intracranial tumours, there was probably some constitutional state or diathesis with which optic neuritis is associated, as iritis is associated with rheumatism and with syphilis. The discovery of such an association, if it exist, would be greatly promoted by the study of those slighter cases that may be found if looked for, but that do not come to ophthalmic surgeons because they do not, in the first instance, affect vision. The author urged physicians generally to lend their aid in investigating the causes of the affection, in order that its serious form might be successfully treated.

ART. 183.—*Notes on the Treatment of Ulcers of the Cornea and Nebulæ.*

By T. SHADFORD WALKER, Surgeon to the Liverpool Eye and Ear Infirmary.

(*Liverpool Medical and Surgical Reports*, November.)

In this paper Mr. Walker alludes to the following forms of corneal ulcer as being most important or most troublesome to be dealt with, viz., traumatic ulcer, followed by infiltration of the cornea with pus, entrance of pus into the aqueous chamber, and hypopyon; ulcers occurring in the course of granular conjunctivitis; the kind of ulcer called serpent; and ulcers met with in phlyctenular cornitis.

1. *Traumatic Ulcer*.—This form, as its name implies, is consequent on injury, most commonly from small pieces of metal, grit, &c. If the foreign body be sharp, or if its point lie above the general surface, the pain produced by friction against the highly sensitive under surface of the eyelid ensures its speedy removal. But should the intruding body penetrate a little more deeply, or have more or less rounded surfaces, it is frequently allowed to remain for days, until the patient finds from the increasing dimness of sight that something is at fault, and he presents himself before the surgeon in the state now to be described. On opening the eyelids, an irregular greyish pit is seen, at the bottom of which the portion of metal or grit can generally readily be observed or felt. Around the edges, the cornea is dim, infiltrated with lymph break-

ing down into pus, and if the patient is old or feeble, or if the delay in applying for relief after the receipt of the injury is great, a quantity of pus, varying according to the severity and depth of the wound, may also be traced into the aqueous chamber, along a track commencing at the lower edge of the ulcer. The conjunctiva covering the eyelids and eyeballs is deeply injected, and the patient complains of great pain, particularly in the frontal region, producing total loss of appetite and of sleep. The sight is of course greatly impaired.

The cornea, having its continuity broken and its texture softened, is dangerously inclined to yield before the internal pressure. Great risk of perforation, loss of aqueous humour, and consequent prolapse of iris into the bottom of the ulcer then occurs, to be followed, in the majority of cases, by a closure of the pupil, the edges of which become united to a dense white cicatrix or leucoma; and in others by staphyloma, causing great deformity in addition to the loss of vision.

Treatment.—In the milder class of cases, where no hypopyon can be observed, and the mischief is limited to the immediate neighbourhood of the injury, it will generally be sufficient, after first carefully removing the metal or grit and the hardened piece of cornea surrounding it, to instil within the eyelids a drop or two of a weak solution of atropia (gr. i ad ʒi) twice or thrice daily; then to keep the eyelids closed by means of a pad of lint and strip of plaster, protected by a few turns of a bandage round the head. The bandage and lint ought only to be raised while the drops are being introduced, which being done, they must be reapplied, and kept pretty firmly bound for several days; after which, should the eye be able to bear the light and the ulcer show signs of healing, the bandage alone, or a shade, such as is commonly worn, will be all that is necessary. The more severe cases require, in addition to these measures, further treatment. It is almost always necessary to puncture the cornea at the lower part with a broad needle, or Graefe's or Sichel's cataract knife, and let out the pus which is filling the anterior chamber. Care should be taken not to evacuate the contents too quickly, as thereby the pain is greatly increased, as well as the flow of blood to the eye augmented. The atropine solution should be dropped in after thoroughly bathing the eye with warm water, and the pad and bandage should then be applied firmly. After the puncture, and again at bedtime, it is advisable to give an opiate; two grains the first time and one afterwards usually give relief from pain and procure some sleep. The surgeon should see the patient daily, applying the atropine and the dressing himself; otherwise the good results he expects are not likely to follow. Quinine, given in two-grain doses three times a day, is almost always requisite, besides being useful in restoring the appetite and strength, broken by the pain and exhaustion. After a few days of this treatment, in all but the worst cases the formation of pus is arrested, the ulcer is smaller, there is less and less infiltration in the surrounding parts, and the amount of vision increases. The patient may now use a weak astringent collyrium, composed of alum or sulphate of zinc, in strength one grain to an ounce of poppy water. After the application of some such wash for a few days the ulcer heals, leaving a cicatrix or nebula, of density and extent corresponding to the size of the pre-existing ulcer. The treatment of the scar will be mentioned

at the end of the paper. It should be stated, that it is sometimes necessary to evacuate the pus a second time, as there is a disposition in certain cases to cause a re-formation of pus in the aqueous chamber. Where the patient is young or strong, Mr. Walker has repeatedly succeeded in producing absorption of pus without puncture of the cornea, so that in favourable instances, and where the pus does not seem to be collecting rapidly, this mode of treatment should always be tried for a day or two, the surgeon carefully and frequently watching the result.

2. Ulcers occurring in conjunction with a granular condition of the conjunctiva, are generally shallow and clear, with well defined edges, towards which one or more dilated blood-vessels occasionally may be seen to run from the conjunctival border of the cornea. Sometimes, in debilitated constitutions, or where an acute attack of inflammation supervenes on a chronic granular state of the eyelids, the ulceration takes on the sloughing or the suppurative character. Whatever the nature of the ulcer, it is extremely sensitive when exposed to light or to touch. The patient keeps the eyelids closed if possible, or if obliged to open them winks violently, and in so doing increases the irritability of the eyes, already greatly heightened by the constant rubbing of the roughened lids over the denuded corneal surface. Every attempt to examine the condition of the parts within the eyelids is resisted by their spasmodic closure, by a copious flow of tears, and frequently by a fit of sneezing. It thus becomes difficult properly to observe what is going on, and still more so to apply suitable dressings. These should be used by the surgeon himself, as it is almost always impossible to induce the patient or his friends to follow out instructions on this point satisfactorily; and if a thorough examination is not made from time to time, perforation may take place, the possibility of which in all cases ought to be kept in view.

Where the ulceration is recent and the photophobia is not great, the granular surfaces may be touched with the modified lunar caustic or sulphate of copper, twice a week. A weak ointment of red or yellow oxide of mercury may be usefully applied within the eyelids every night and morning by means of a camel-hair brush, and the eyes may be bathed with warm poppy water from time to time during the day. Protection is best afforded by a shade, admitting air, but excluding light. No hot or tight bandage or handkerchief should be allowed. The internal treatment should consist of full diet, and the administration of tonics, especially iron combined with quinine, and cod-liver oil. Fresh air and exercise out of doors are decidedly beneficial. When the disease is of a more severe character or of longer duration, the use of a weak atropine drop twice or thrice daily is necessary until the irritability partially subsides, upon which the swollen lids may be lightly brushed over with the linimentum iodi, or a strong solution of nitrate of silver, about twice a week. These remedies, steadily persevered in, and modified from time to time by the varying phases of the malady, seldom fail to restore the cornea and conjunctiva to their normal state.

3. The Serpent ulcer, the nature and treatment of which have recently been the subject of special study by Prof. Saemisch, is so called from its tendency to spread rapidly and cause extensive sloughing of the cornea, without being accompanied by inflammatory symptoms, at any

rate in the majority of instances. It occurs chiefly in enfeebled or old persons, and is almost always complicated with hypopyon, which is sometimes due to perforation of the cornea by the ulcer, sometimes to inflammation of the posterior corneal layers, and at others to iritis. It commences as a greyish infiltration which soon becomes an ulcer, and not only spreads on the surface, but penetrates deeply into the substance of the cornea, quickly causing perforation and sloughing unless checked by proper means. Being free from inflammation and generally from acute pain, it is often allowed to proceed to a dangerous extent, and even till the mischief is complete; hence the importance of taking prompt measures. The most effectual is the division of the ulcer after the method devised by Dr. Saemisch, which essentially consists in passing Von Graefe's narrow cataract knife through the healthy cornea at a short distance from the temporal edge of the ulcer, carrying the knife along the anterior chamber till the point reaches the healthy cornea at the opposite side, when a counter-puncture is made, and the ulcer completely divided through its base and whole extent, the aqueous humour and pus, if any exists, being allowed to escape slowly. A compress is then applied, and after a few hours atropine is dropped in. The ulcer under this treatment soon begins to heal. It is requisite for some time, twice daily, to insert a fine probe between the edges of the incision to let off the aqueous humour, until the healing of the ulcer is thoroughly established. The general treatment should consist of tonics and generous diet, given with a free hand.

4. Ulcers occurring in the course of phlyctenular corneitis call for notice, not so much from their being usually attended by danger, as from the fact that they cause extreme suffering, and because they make their appearance in crops. No sooner does the surgeon get rid of one set and congratulate himself that the end is at hand, than another set shows itself in another part of the cornea, causing a recurrence of the train of symptoms previously observed. The phlyctenulæ present themselves first as vesicles, which soon break, discharge their contents, and are converted into greyish or yellowish shallow ulcers, whose edges are elevated above the general surface. By exposing the corneal nerve filaments they create great pain, both ocular and frontal, increased on exposure to light, profuse lachrymation, followed by loss of appetite and sleep, and impairment of the general health. If the ulcers are numerous and the movement of the eyelids produces, as it generally does, much suffering, a firm compress bandage should be applied for some hours. Weak atropine solution should be dropped into the eye several times a day, and an ointment of mercury and opium should be rubbed in over the temple and eyebrow every night and morning. The eye should be bathed with hot poppy water occasionally, and light carefully excluded by means of eye-shades or coloured spectacles. Outdoor exercise should be recommended if the patient's strength will permit, and the general health maintained by tonics, full diet, and stimulants carefully administered. By these means in a few weeks the disease can generally be controlled, and a change of air to the seaside may be reckoned on to complete the cure.

Mr. Walker next proceeds to notice the results of the healing of the ulcer, with the object of showing the various approved methods adopted

for producing their total, or, where that is impossible, their partial disappearance. Wherever an ulcer of the cornea has existed, no matter what its origin or course, so soon as the ulcerative process is arrested and the healing process begins, it will be observed that the portion of the cornea affected is no longer clear and transparent as before. The new matter deposited in place of that destroyed by ulceration, is more or less opaque, and therefore interferes with correct vision. Contraction follows deposition, and a nebula or macula is the consequence. These opacities are observed either on the surface or extending more deeply into the layers of the cornea. They may be very thin or very dense, and may occupy a large or only a very small extent; this point depending on the nature, severity, and size of the previous ulceration. Another class of maculæ is found to occur without ulceration, in the course of some kinds of corneitis. These usually present the appearance of minute roundish specks, scattered pretty evenly throughout the cornea, and so numerous as often to produce general opacity, and give the cornea the appearance of a frosted window. This form requires different treatment from those resulting from ulceration, which will be described afterwards. It must not be forgotten that the most extreme form of nebula is seen after the extensive ulceration occurring in ophthalmia neonatorum, or in gonorrheal ophthalmia. Here the whole of the cornea is involved, either in the stage of infiltration with inflammatory deposit, or of sloughing ulcer. If only slight dimness exists, and both eyes are affected, the patient habitually strains the eyes in the effort to see distinctly, and so induces muscular distress, and impairment of the accommodation of the eyes. In some cases, the defect of sight depends on the situation of the cicatrix, or nebula. For instance, a nebula, even of small dimensions and depth, situated at or near the corneal centre, is of a much more serious nature, and vastly more important to the sufferer, than a very large or dense one near the circumference, where it would be out of the line of vision. This includes, perhaps, the largest and most dangerous class of cases, especially when to central situation is added density, and, what usually accompanies it, depth. When, in addition to the foregoing circumstances, we find perforation to have taken place, the catalogue of disaster is complete, for here a portion of prolapsed iris plugs the internal orifice, or adheres to the inner surface of the nebula. It is noticeable, that where the opacity, whether dense or not, is situated so as partly to obscure one side of the pupil, it is followed sooner or later by strabismus, the direction of which depends of course on the situation of the nebula.

The treatment of opacities of the cornea depends, to a certain extent, upon their duration. If a patient has allowed a long time to elapse before the inconvenience under which he labours from the existence of the nebula, or the unsightliness of the cicatrix, compels him to try to obtain relief, the freedom from active symptoms, and the quiet condition of the parts, permit of a more stimulating plan being adopted, than if the ulcer has only recently closed, leaving the structures in a state highly susceptible of again taking on inflammatory action. It is therefore necessary, first, to make sure of this point, and to examine the condition of the palpebral conjunctiva. Having ascertained that there is no undue sensitiveness of the parts covering the globe and

inner surface of the eyelids, to which remedies must be applied ; and further, the case being of recent origin, it is well to commence by prescribing a weak astringent collyrium, composed of alum, zinc, or bichloride of mercury, with which the eyes may be bathed three times a day. The strength of this wash should not at first exceed two grains to the ounce of water when the wash is composed of sulphate of alum or zinc, and of one grain to six ounces in the case of the bichloride wash. At night, an ointment of the red oxide or the weak nitrate of mercury should be inserted between the edges of the eyelids by means of a camel-hair brush, in such a manner that the ointment gets fairly inside the eyelids, and comes directly in contact with the nebulous portion of the cornea. If the application cause so much pain that the smarting does not disappear in about fifteen minutes, or become quite bearable at the expiration of that time, the strength should be lowered by one-third, or even to a greater extent if necessary, the creation of excessive action being of no service in the removal of the malady. By using one or other of the above-mentioned remedies with due care and discretion, for a few weeks, the more recently formed and slighter nebulæ can generally be got rid of, and a clear, free cornea re-established. But in the cases of longer standing, other remedies are necessary, in addition to the milder ones suitable to recently formed nebulæ. In old cases, applications of a distinctly stimulating character afford the best results. They require to be used for a much greater length of time than in fresh cases, and to be changed occasionally, in order to prevent delay through the system becoming accustomed to their action, and ceasing to respond.

Among those found to answer most satisfactorily, are the *vinum opii*, solutions of nitrate of silver, iodide of potassium, and sulphate of copper and zinc, of various strengths, applied in the form of drops or washes. In powder, the dried sulphate of soda and calomel render good service. Lastly, the *unguentum hydrarg. nitratis mitius*, and the *unguentum hydrarg. oxydi rubri et flavi*, in strength varying from one to four grains to the drachm of fat or lard, materially assist the cure.

When drops are deemed advisable, they should be applied, by means of a drop-bottle or a camel-hair brush of moderate size, to the inner surface of the lower eyelid, whence they speedily reach the cornea, producing in a few minutes a reddened appearance of both eyeball and eyelids. The application ought to be made twice a day, the early morning and bedtime being the best times. The drop-bottle is the best adapted for the uses of washes also, since, when applied in the ordinary manner, much of their bulk is wasted or never comes in contact with the cornea at all, while, on the contrary, when the bottle is used a smaller quantity suffices, and the simplicity of the instrument ensures the greater control of the remedy, and certainty in its application. It will allow only a drop to escape, or send a stream into the eye, at the pleasure of the operator, without touching any part of the organ ; in both of which respects it is greatly superior to the brush or solid glass rod, and is preferable to eye douches on account of its greater cheapness, portability, cleanliness, and want of resemblance to a surgical instrument—the last point a very important one, where children, who are the most frequent sufferers, are concerned.

Ointments must be sufficiently soft to be taken up by a camel-hair brush. They can be readily introduced by gently separating the eyelids with the fingers of the left hand, whilst with the right hand the brush is made to pass firmly and gently quite inside the eyelids, the action of the muscular apparatus of the lids sufficing to remove enough of the remedy. The proper times for the application of ointment are, the last thing at night, and after dressing in the morning. When drops or washes are also used in the same case, ointments must always be applied *after* the former; otherwise the one remedy will protect the eye from the action of the other, and neutralize it altogether. It is usually well to prescribe both a drop and an ointment, or a wash and an ointment, to be used in the treatment at different times of the same day, instead of only using one remedy. The powder may be applied either by gently blowing a quantity, equal in bulk to half a pea, through a quill, placed between the eyelids well opened, or by dipping a dry camel-hair brush into the powder, opening the lids, and flinging off a small quantity by a smart tap with the finger.

All these remedies, no matter how applied, cause considerable pain, which is unavoidable. But the suffering is useless and injurious if it lasts longer than about half an hour. Should any remedy be found so acting, its strength ought at once to be lowered, until the duration of the pain is brought within this limit. A little care will soon enable the surgeon to decide on the proper strength. After having steadily used a remedy for about a month, it is generally advisable to change it for one of a different nature, as the absorption of the nebula is observed to be more slowly carried on when the same application is too long continued. For instance, if the treatment be commenced by one or other of the drops and ointments previously mentioned, these should both be changed, recourse being had to a powder and a different ointment, or to a wash without an ointment. By alternating in this way, ground gained in the first instance is less likely to be lost, and fresh impression is made upon a nebula already beginning to yield. Wherever a nebula has been partially removed, the patient should be urged to persevere, in spite of what may appear the length of time during which he may have been under treatment, since great patience is requisite in all old standing cases, even when the disease is superficial. Many cases can by their nature be susceptible of only partial removal, but even this may be of great importance to effect, in order to improve vision or personal appearance. Finally, it is useless to attempt the treatment of *nebulæ* which penetrate through the whole or greater part of the thickness of the cornea. They are always very dense, and present an opaque white appearance, well known to those who see a great number of cases.

ART. 184.—*On Albuminuric Retinitis.*

By ARGYLE ROBERTSON, M.D.

(*Medical Times and Gazette*, November 26.)

At a meeting of the Medico-Chirurgical Society of Edinburgh, on Nov. 16th, Dr. Argyle Robertson read a most interesting paper on

“Albuminuric Retinitis.” After briefly narrating the history of the gradual elucidation of the ophthalmic complications of Bright’s disease, and describing the morbid appearances revealed by the ophthalmoscope, and found on post-mortem examination, he narrated a number of cases which had occurred in his own practice during the past year, in several of which no suspicion of anything, excepting disease of the eye, had existed at the time of their application to him—cases, in fact, in which albuminuria had been diagnosed simply by means of the ophthalmoscope. He suggested a view as to the nature of the retinal affection different from that which is commonly entertained—viz., that the yellow patches were due to the results of inflammatory processes, which, although hitherto detected only, or almost only, in the eye, probably existed in other parts of the nervous system, and occasioned many of the peculiar nervous symptoms often met with in the disease, and classed under the general term uræmia.

ART. 185.—*On Palpebral Granulations.*

By Dr. HILARION.

(*Annales d’Oculistique*, 1870.)

According to the author, the vesicular granulation which forms the essential anatomical characteristic of the ophthalmia of armies is a specific affection. Its specificity depends upon its anatomical characters, upon its exotic origin, and upon its contagious properties. The so-called military ophthalmia was unknown in Europe before the return of the English and French armies from Egypt. From armies the granulo-vesicular ophthalmia passed to civil populations, in which it is at the present day extensively distributed.

ART. 186.—*On the Treatment of Cicatricial Ectropion by Palpebral Occlusion.*

By Dr. MIRAULT.

(*Annales d’Oculistique*, Avril, 1862, t. xxv.)

This subject is dealt with by Dr. Mirault in a memoir to which a prize was decreed by the French Academy of Sciences.

It is twenty-seven years since Dr. Mirault published his first case of palpebral occlusion applied to the treatment of double ectropion. Since that time a great number of surgeons has employed this operative method, which was conceived on the most rational grounds, and has given the best results.

When the two lids are turned over it is an easy matter to replace them in the position which they normally occupy by practising properly disposed incisions at a short distance from their free border; but the palpebral folds are soon drawn back by the retraction of the cicatricial tissue, which is formed on the surface exposed by the dissection and

return to the faulty position which they occupied before the operation. Surgeons know of no bandage and no topical plan of treatment which will guard the patient from this cicatricial retraction.

It was for the purpose of avoiding this that Mirault thought of uniting by suture the two vivified edges of the lids, after having brought them in contact. After the re-union, the two lids have a tendency to become again everted, but when they are bound together by adhesion at their margins, the cicatricial retractility acts inversely in each lid, and consecutive eversion becomes impossible.

It remains to separate the lids by dividing the suture at the end of a certain period.

Experience has confirmed the exactness of these theoretical statements, and temporary palpebral occlusion has taken its place among the most useful operations for the restoration of the lids. But, in certain cases, and among others, in unipalpebral ectropion, this method is no longer applicable. In this case, the normally placed and healthy lid does not resist the attraction of the everted lid: success requires two tractions in different directions, or at least, the union of the everted lid to a part disposed in such a manner as to resist traction.

For the sake of attaining this end, Dr. Mirault has modified his operation, a modification which constituted the principal portion of his recent memoir.

In a case of unipalpebral ectropion, he cuts a triangular flap, the base of which corresponds to the ciliary margin of the lid; he dissects this up, and renders it sufficiently free to be readily placed in front of the eye where it is retained.

With this end in view, he fixes his flap at a point which cannot be affected by the cicatricial retraction; but this point exists, not at the border, but at the base of the non-everted lid; he forms, by means of a T-shaped incision, two triangular flaps, under which he insinuates and fixes the flap formed from the dissected lid and turned over in front of the eye.

ART. 187.—*On the Methods of Treatment to be adopted in the various Lesions of the Lachrymal Apparatus.**

By THOMAS BICKERTON, F.R.C.S. Edin.

(*Liverpool Medical and Surgical Reports*, October.)

The author exhibited a great variety of instruments, illustrating the history of the different modes of treatment in use at various times. He dwelt upon the old plan of attempting to dilate the duct from the nose, and showed its inefficiency; then upon the plan of simply putting styles into the nasal duct; and then showed how great an improvement Bowman had effected by his operation of slitting up the punctum and canaliculus. Finally, he described the modern operation of slitting; and Weber's, consisting in the introduction of a powerful graduated

* Abstract of a Paper read at a Meeting of the Liverpool Medical Institution, Session 1869-70.

probe into the sac, after a peculiarly shaped knife had been passed down, and the stricture thoroughly divided. He showed an improved form of probe, of his own invention, in which there was a small groove at the side, along which the knife could be slipped down into the sac with perfect safety. He also showed an improvement in the shape of the knife.

ART. 188.—*On Irrigation of the Membrana Tympani with Tepid Water.**

By M. PRAT.

“The author in this communication endeavours to establish as a fact that the membrana tympani, as a living membrane, requires for its nourishment to be hydrated; whilst, on the other hand, as a physical collector of sound, it needs to be dry to a certain extent, in order to transmit the sonorous vibrations. Hence a certain antagonism between the maintenance of the organ and its function.

“However, as the majority of its affections consist in disturbances of nutrition, it is in this direction that it is necessary to apply one’s efforts in order to modify the nutritive force either by diminishing it or by augmenting it.

“The author has thus been led to propose abundant irrigation of tepid water, simple or medicated, as one of the most prompt and most efficacious curative means against deafness.”

ART. 189.—*On the Cause of the Special Gravity of Anthrax and Boils of the Face.*

By M. G. REVERDIN.

(*Archives Générales de Médecine*, June 1870.)

The author treats his subject in a complete manner from historical, anatomical, and clinical points of view. A case in which the microscopical examination was made with the greatest care, demonstrated to M. Reverdin traces of phlebitis extending to all the veins of the face. Taken in connexion with several analogous facts, this case permits the author to conclude that the gravity of anthrax of the face is due to phlebitis, which, originating in the focus of the anthrax, is propagated to the face, the neck, and even further, and penetrates by the ophthalmic vein into the cavernous nerves. In a case reported by M. Reverdin, he found suppurative phlebitis of the internal jugular vein, and metastatic abscesses of the lungs and one kidney.

* Communicated to the Académie de Médecine, May 24, 1870.

ART. 190.—*Recollections of Work in an Ambulance.*

By WILLIAM MACCORMAC, F.R.C.S., Surgeon to the General Hospital, Belfast.

(*British Medical Journal*, November 19.)

Dr. MacCormac has recorded many cases which came under his care, of deep interest; amongst others, the two following, in which he was afterwards compelled to tie the common carotid for secondary hæmorrhage.

“Case 1 was that of a French colonel, who had been wounded near Balan on September 1st. The ball had entered the right cheek, passed downwards through the horizontal ramus of the inferior maxilla, comminuting it extensively; and lodged deeply beneath the right sterno-mastoid muscle, where it was with great difficulty detected. On the following day, I removed it through a very deep incision along the posterior edge of the muscle, at a point level with the angle of the jaw. The ball was much altered in shape, and a piece of the lower jaw was firmly impacted in it. I thought the colonel was quite convalescent, when, on September 10th, he had a severe attack of hæmorrhage both from the mouth and from the wound made for the extraction of the ball; this was checked. He had a second attack, which was also arrested; then a third, all on the same day, and more profuse than the others, took place. At midnight, I cut down upon and tied the common carotid. No return of the bleeding took place. The ligature fell in fourteen days; I brought the colonel away with me when I left Sedan, and he is now staying in Brussels. His father, also a colonel, was shot almost in the same manner at Waterloo, and recovered, like his son, from the wound.

“My other case, similar in many respects to that just narrated, was not so fortunate in its issue. Jacob Kieder, a Prussian, aged twenty-two, was wounded on September 1st. The ball entered just beneath, and slightly external to, the left ala of the nose; it then ripped up the whole of the hard and soft palates in the central line, with the exception of the alveolar ridge. Three days afterwards, the bullet was extracted through a deep incision opposite the middle of the posterior border of the right sterno-mastoid. This patient made good progress until the afternoon of September 11th. He was, like the colonel, apparently convalescent, and able to walk about. On that day, very profuse bleeding took place. The blood poured down through the wound in the roof of the mouth so fast as almost to choke him; and free bleeding also occurred from the incision behind the sterno-mastoid. The difficulty was to ascertain whence the hæmorrhage came. Pressure exerted alternately on each carotid failed to afford the clue, as no decided effect was produced. There was no time to hesitate; the man was rapidly bleeding to death. I decided that, although the mouth-wound was mesial, the bullet had, in traversing the right side of the neck, probably injured some branch of the right external carotid. I tied the right common carotid, and to my great relief, the bleeding was permanently arrested; otherwise one might have had the undesired

opportunity of witnessing the effects of simultaneous ligation of both carotids; for I would have tied the opposite external carotid, had the first ligature failed to stop the bleeding. Nieder for five days progressed favourably; acute double pneumonia then set in, and he died."

ART. 191.—*On the Diagnosis of Fracture of the Cranium.*

By Dr. H. LE DEBEEDER.

(*Etude sur les Signes et le Diagnostic des Fractures du Crâne*, Paris, 1870.)

"1. The signs of fracture of the cranium are numerous. Among the rational signs two only are pathognomonic; these are discharges of cerebral matter, and of cephalo-rachidian fluid.

"2. Cerebral commotion is a well-defined pathological fact; but not so contusion or effusion of blood.

"3. Effusion and contusion may give rise to very diverse symptoms; they may manifest similar symptoms; they may pass unperceived: in a word, they are not constant signs.

"4. Pain on pressure is the most constant sign of fracture of the cranium.

"5. The diagnosis of fracture of the cranium ought to be based upon the *ensemble* of the signs and on the progress of the bad symptoms.

"6. The phenomena described by authors under the name of prolonged signs of commotion are an almost certain indication of fracture."

ART. 192.—*Tumour of the Bones of the Skull.*

By L. R. THOMSON, M.D., Dalkeith, and A. G. MILLER, M.D.,
F.R.C.S.E.

(*Edinburgh Medical Journal*, July 1869.)

The following case is interesting from the order in which the symptoms occurred, as well as from the pathological changes with which they were associated:—

J. G., aged twenty-one, was first seen in May, 1868. He was then ruddy, and had enjoyed good health up to the commencement of his illness. In September, 1867, while at work as a gardener, he suddenly felt a disagreeable sensation in his left ear, as if a wasp had got into it, and had produced a buzzing sound. This was followed a month afterwards by pain in the left ear at the back of the auricle. In December he had become somewhat deaf on the same side, and had the ordinary symptoms of coryza. In the spring of 1868 he complained of increasing pain at the back of the ear, extending down to the angle of the lower jaw, where at this time were observed several well-defined glandular swellings. He then also began to sleep much, when he came in from his work felt weak, lost his usual appetite, and frequently vomited his food. In May of the same year dysphagia came on, and he could only swallow soft and fluid materials. There was then also a good deal of diffused swelling behind the left angle of the lower jaw.

Deafness had increased very much, and pain had begun to extend through both temples and to the right ear. On rising in the morning the eyelids were œdematous. In June, Dr. Watson diagnosed a tumour affecting the sphenoid bone, extending downwards to the soft palate and upwards to the base of the brain. His sight then became dim, and was first lost in the right eye. He ultimately became stone blind, and before death sloughing of the cornea took place. At an early period there was ptosis on the left side, the right eye was afterwards closed by œdema. In July his mental faculties became intermittently disordered, and he was seized with fits of violent delirium. Deglutition became more difficult, but in August a severe bleeding from the throat took place which relieved this symptom. The tumour now seemed to stop growing downwards, but to extend rapidly upwards and on each side, as manifested by impairment of mental faculties and fulness in the temples. During August and September he gradually got worse, but at the end of the latter month delirium ceased. He was mentally clear and collected except when under the attacks of delirium. In October an ulcerated cavity became visible in the tumour; this extended to the palate, and threw the nares and mouth into one cavity. At the end of this month the tumour showed itself in the left cheek, extending from the antrum. The patient died from asthenia on Nov. 9th.

ART. 193.—*Partial Excision of the Tongue.*

By GEORGE H. B. MACLEOD, M.D., F.R.S.E., Professor of Surgery in the University of Glasgow.

(*Glasgow Medical Journal*, November.)

In June last Dr. Macleod had occasion to remove the anterior two-thirds of the right half of the tongue for epithelioma, which dated back for ten years, beginning as a small irritable lump, which blistered and fissured, and would not heal, though the teeth were extracted and various local measures used. The patient was a collier, aged 50, and in fair health. He was a smoker, but knew of no other cause of the affection. He denied ever having had syphilis, and had no evidence of its presence. The ulcer was a flat, somewhat elevated, hard-based, dirty purple sore, with a turned-down edge, and accompanied by much fetor. It did not extend across the middle line. The glands below the jaw were little affected, notwithstanding the long existence of the disease, and the structures in the floor of the mouth were sound. Mr. Macleod split the cheek from the angle of the mouth far enough to enable him, after dividing the tongue longitudinally with the knife, to apply the ecraseur. The resulting deformity was very slight, and the patient was out of bed on the second day. He made a rapid recovery with fair articulation. The enlarged glands had almost disappeared when he left the hospital. A microscopic examination of the removed portion verified the diagnosis.

The ecraseur, Dr. Macleod states, is admirably fitted for such operations. In fact, it is for such purposes alone that it is of any use. When removing the tongue the instrument should be worked very slowly, otherwise the great advantage to be gained from it in preventing hæmorrhage will be lost.

It is only in cases like the above, where the irritation of the glands is

slight and the disease limited, that any good can be got from excision. When the floor of the mouth and the tissues of the cheek are implicated (as was the case in two patients lately sent to Dr. Macleod from the country for operation), nothing can be attempted. The method of getting at the portion to be removed, employed in the above case, answers very fairly, and the after annoyance and deformity is considerably less than when the lower lip and jaw are split, or incisions made under the lower maxillary bone. The attachments of the genio-hyo-glossi being freely separated from the bone, and a long curved needle passed as far back as the section is wished, enables the chain of the ecraseur to be placed well back and kept steady.

ART. 194.—*Cases of Traumatic Facial Paralysis.*

By Prof. ERB, of Heidelberg.

(*Archiv für klinische Medicin*, vii. 2, 1870 ; *Schmidt's Jahrbücher*, No. 5, 1870.)

The author relates two cases of paralysis of the facial nerve, produced by injury, which manifested a similar alteration in the electrical reaction of nerve and muscle to what has been observed in other traumatic paralyses on the one hand, and in severe cases of the so-called rheumatic facial paralysis on the other. From this accordance, Erb concludes that the latter affection depends upon an energetic inflammatory compression of the facial nerve in the Fallopiian canal, as was long ago maintained by Schulz.

Both cases are interesting from their complications. In each instance there was deafness and noises in the ears, by which latter symptom hyperæsthesia of the auditory nerve was inducted, but which, however, Erb agrees with Brenner in considering as due to inertness of the nerve. The deafness points to the petrous bone as being the seat of the affection.

In one case there was found a normal condition of the velum palati, with loss of taste at the anterior part of the tongue, on the paralysed side.

In the second case, on the other hand, there was no impairment of taste on this side, whilst there was unilateral paralysis of the palate.

Prof. Erb explains this difference thus: in the first case the injury—fracture of the petrous bone in the neighbourhood of the tympanum—had involved the facial nerve below the geniculate ganglion, but above the starting-point of the chorda tympani. Thus the greater superficial petrosal nerve, and with it the fibres to the palate, remained in connexion with the central trunk of the facial nerve, whilst the chorda tympani underwent paralysis.

In the second case, on the other hand, there must have been an injury to the nerve above the geniculate ganglion.

The fact that the fibres for the velum palati, and those of the chorda tympani, may become independently affected with paralysis of the facial nerve, speaks for the correctness of Schiff's conception concerning the course of the fibres of the chorda tympani, whereby these do not proceed with the facial nerve as far as the brain, but pass from the

geniculate ganglion through and along with the superficial petrosal nerve, and from thence course centripetally along with the second branch of the trigeminus.

The precise diagnosis of the seat of the disease in peripheral paralysis of the facial nerve, may be conceived in the following manner:—

1. When the condition of the palate and the sense of taste are normal, the seat of injury is below the seat of the chorda tympani.
2. When we see isolated paralysis of taste, the seat of injury must be between the last point and the geniculate ganglion.
3. When there is isolated paralysis of the velum palati, it lies below the geniculate ganglion.
4. In instances of paralysis both of taste and of the velum palati, the geniculate ganglion itself is affected.

(B) CONCERNING THE TRUNK.

ART. 195.—*Partial Removal of the Breast for Scirrhus.*

By LUTHER HOLDEN, F.R.C.S., Surgeon to St. Bartholomew's Hospital.

(*The Lancet*, May 28.)

On Saturday, April 30th, Mr. Holden removed a small scirrhus tumour from the left breast of a middle-aged woman, whose case was one of some importance, from its bearing upon the questions of the mode of propagation and of the local treatment of cancer. In some subsequent remarks, it was stated by Mr. Holden that this patient had just made her third appearance in the theatre for the purpose of having cancerous disease removed from the breast. The first operation had been performed three years previously, for the excision of a scirrhus tumour of the size of a walnut, which was deeply imbedded in the tissue of the left mammary gland. The removed structures consisted merely of the diseased portion of the breast, and a very large part of the gland was allowed to remain. Fifteen months ago the woman presented herself with a recurrence of the disease in the same breast; the growth was small, and, like the former, was imbedded in the gland, but far away from the seat of the first operation, the cicatrix not being involved. After a second operation the patient had a short interval of health and ease, and then the disease again returned, not in the neighbourhood of the scars formed by previous operations, and not even imbedded in or involving in any way the remaining portions of the mammary gland, but situated to the outer side of the breast, and surrounded on all sides by the connective tissue of this region. It had for many years been his practice, Mr. Holden said, to perform partial operations of this kind in cases of cancer, removing the structures that were involved in the disease, and leaving those that were quite healthy. The results of such treatment had been well exemplified in the present instance: a large portion of the breast had been preserved to the woman, which in the second recurrence of the cancerous disease remained un-

affected. In cases where the tumours were small and very recent, such practice as this would prolong life and increase the comfort of the patient. The plan of removing only the diseased portions of an organ affected with cancer was at the present day coming into frequent use. It was by no means a novel one, but a return to a form of practice which had long ago preceded the widely adopted plan of making the incisions far beyond the limits of the disease, and removing the whole breast, even though a small portion only of the gland was involved. The tumour removed by the last operation in Mr. Holden's case was vascular, and of a darker tint than is usually presented by scirrhus growths. It was, however, of stony hardness, and of irregular shape, sending out several root-like prolongations. In the removal of small scirrhus tumours, it is a good plan, according to Dr. Holden, to substitute the fingers of the left hand for the forceps. The extensions of the hard growth into the surrounding connective tissue can thus be readily made out, and the whole of the disease removed.

ART. 196.—*Case of Aneurism of the Aorta.*

By CHRISTOPHER HEATH, F.R.C.S.

(*The Lancet*, October 29.)

At a meeting of the Pathological Society of London, on October 8, Mr. Christopher Heath exhibited a specimen of aneurism of the aorta from a man aged forty-five, admitted into University College Hospital with a large thoracic tumour some months before. There was much congestion of the right side of the neck, and flattening out of the clavicle, produced by a pulsating tumour of doubtful seat, but probably in the innominate artery. The left pulse was hardly perceptible; there was dyspnœa, but no dysphagia. It seemed to Mr. Heath of small importance whether the seat was in the innominate or aorta, with regard to operation. Mr. Heath determined to tie the left subclavian and the carotid; but on attempting to carry out his intention he failed to find the former vessel, or any of the usual guides to its situation, but came upon a pulsating sac, and the operation was abandoned. The patient went on well for two or three days, when hæmorrhage occurred, and he did not rally, and died on the sixth day afterwards. The post-mortem disclosed a large sacculated aneurism of the aorta, involving the innominate, and overlapping the site of the subclavian, which was completely obliterated.

ART. 197.—*Report of a Case of Extirpation of the Kidney.*

By Prof. SIMON, of Heidelberg.

(*Annales de la Société Médico-Chirurgicale de Liège*, 1869; *Gazette Hebdomadaire*, No. 20, 1870.)

This operation was performed at the Heidelberg Hospital on August 2, 1869; the patient was a female, who had previously undergone ovariectomy.

The ovariectomy had been performed for the extirpation of an ovarian cyst. The diseased ovary, however, which was as large as a child's head, had contracted such intimate connexions with the uterus, that it was necessary to extirpate this organ. In addition, the left ovary was removed; the left ureter, which was included in the adhesions, was also cut.

The patient recovered, but there remained a fistula through the abdominal wall below the umbilicus. This fistula not only communicated with the incised ureter, but also through the remaining portion of the neck of the uterus and the vagina, with the vulva, in such a manner that an elastic sound introduced at the abdominal orifice of the fistulous neck issued by this latter opening.

These lesions constituted a serious infirmity: the urine flowed incessantly from the two orifices, whatever might be the position of the patient, and produced excoriation and constant inflammation.

Professor Simon endeavoured with several means to bring about a cure of the fistula. He endeavoured to obtain occlusion of the abdominal orifice of the fistula as well as of the slit in the vulva, with the intention of subsequently establishing a communication between the vagina and bladder. He made two attempts at the first part of the operation; he dissected up a flap of skin which was made to glide over the wound. Unfortunately serious symptoms compelled him to give up this plan of treatment. Professor Simon then decided to extirpate the kidney. He assured himself, by means of injections into the bladder, that the urine which flowed from the fistula, really proceeded from the ureter, and not from a vesico-vaginal fistula; he then made several experiments with the aim of refuting the objections raised against the operation itself, and of judging of the chances of a successful result. Finally, Professor Simon endeavoured to demonstrate that the objections raised to nephrotomy were not so weighty as they have been generally supposed. With regard to its gravity, nephrotomy presents this advantage over ovariectomy, ablation of the uterus, or splenotomy, that the kidney may be separated from the peritoneum without any opening having been made in this serous sac; with regard to the insufficiency of the urinary secretion, it is not proved that the increased function of the remaining kidney united with that of the cutaneous secretion will not suffice for the wants of the organism; on the contrary, experiments made on dogs have demonstrated that in these animals life is compatible with ablation of the kidney.

Professor Simon proceeded to the operation in the following manner: The patient having been put under the influence of chloroform and placed upon her back, the operator, taking the twelfth rib as a guiding point, made an incision through the integuments, proceeding from the inferior border of the eleventh rib as far as the middle of the space separating the last rib from the crest of the ileum, and lying about six centimetres to the outer side of the vertebral spinous processes. The subcutaneous tissues were then divided layer by layer with much care. The difficulties of the operation were increased in consequence of the *embonpoint* of the patient. After the aponeuroses of the small oblique and transversalis muscles had been divided, and the external border of the longissimus dorsi muscle pushed inwards, the operator arrived at the quadratus lumborum muscle immediately covering the kidney. This also was

incised. With the exception of some nerves passing between the kidney and the last-named muscle, no organ of any importance was wounded. Having arrived at the cellulo-adipose capsule which encloses the kidney, Prof. Simon split this along its whole length, and then enucleated the organ. After he had thus completely isolated the kidney, he caused it to protrude through the incision, applied a strong ligature around the renal vessels, and excised the organ, leaving but a small portion of the hilum as a *point d'appui* for the ligature. Some points of suture were then placed near the two extremities of the incision, the central part of which was allowed to remain open so as to favour the discharge of pus. The operation lasted for forty minutes. On the following day the patient presented some slight feverish symptoms; she had after the operation suffered from bilious vomiting, which was probably due to the chloroform. The urine was thick and less abundant than might have been expected after the cessation of the discharge from the fistula. But this may be explained by the fact that the patient had perspired freely after the operation.

On the following day the febrile action was more pronounced, the pulse was 140 and some slight symptoms of inflammation, probably peritonitis, commenced to manifest themselves. On the other hand there was no trace in the patient of any paralysis of the lower limbs, a symptom observed in dogs after nephrotomy. Moreover, the patient had not shown after the operation any sign of delirium. The condition of the wound was as satisfactory as one could desire. The pus was healthy and scanty; some granulations had already presented themselves, and the bottom of the wound had commenced to close. On this day some of the sutures were removed. On August 13, the patient began to improve, she had no more fever, the appetite was good, and the supuration scanty.

On September 29 the patient was perfectly well. The wound was then completely cicatrized with the exception of one small point through which passed the ligatures which had not yet become detached. Not more than one or two drops of pus flowed away daily. There was also a slight purulent discharge from the vagina. The fistula in the abdominal wall was rapidly closing. The stomach was very sensitive, being damaged by the smallest change of diet. The patient left the hospital perfectly cured.

ART. 198.—*Case of Fatal Injury to the Kidney in a Subject Possessing only one Kidney.*

Under the care of Mr. JAMES TAYLOR, Surgeon to the Chester General Infirmary.

(*British Medical Journal*, November 5.)

Several points in the following case, which came under Mr. Taylor's care at the Infirmary, make the case one deserving of record. They are:—1. The rarity of persons having only one kidney; 2. The great amount of injury of the kidney without any corresponding bruise; 3.

Death resulting from a secondary effect of the injury (uræmic poisoning) rather than from the direct injury to the organ.

The following are the notes of the case during life taken by Dr. Haining, the house-surgeon:—

John E., aged twenty-two, was admitted under the care of Mr. Taylor, about 4 P.M., 17th October, 1870. The patient, who had previously always been healthy, but was rather given to drink, fell from the city walls near the Northgate on to the roof of a building, and thence rolled to the ground, alighting, according to a witness, on his head, his knee being doubled up against his stomach. He seemed evidently under the influence of drink, although he could stand without assistance. He complained of great pain over the left false ribs, especially when attempting to raise the body into the erect position. No fracture of the ribs or pelvis was detectable. There was a slight graze on the left cheek. He was put to bed, and a hot flannel was wrapped round the abdomen. He slept for an hour or two. At 9 P.M., as no urine had been passed, a No. 12 catheter was passed, drawing off about ten ounces of dark port-wine-coloured fluid. He had pain in the left side of the abdomen, and occasional darting pain in the left thigh. A draught containing twenty grains of chloral hydrate, and half a grain of hydrochlorate of morphia, was given.

October 18th, 2 P.M.—The draught was vomited. He was restless; but had pain only on moving. Half a grain of morphia was given. 10.30 A.M.—He had slept part of the night. Pulse 88; temperature 99 deg.; respiration easy. A catheter was passed, but about two drachms of dark fluid only came away, almost pure blood. Catheterism gave great pain; and afterwards he fancied he could pass urine, but was unable to do so. There was no dulness above the pubes. A hot bath was administered. 6 P.M.—He had no inclination to pass urine. The hot bath was repeated, followed by half a grain of hydrochlorate of morphia. 9 P.M.—He slept after the bath. The catheter was passed, but nothing came away. Pulse 94; respiration easier.

October 19th, 11 A.M.—He had a favourable day, and had only slight pain in the left side on turning. A catheter was passed easily, and about two drachms of bloody urine were withdrawn. There was no dulness above the pubes. He vomited his breakfast of milk and tea. There was slight delirium. Pulse 102; temperature 99.6°. 4 P.M.—His breathing was slow and stertorous occasionally for a minute or two, and his face rather livid; but he was easily roused. There was slight incoherence at times. There was no abdominal tenderness. Percussion was tympanitic. 6 P.M.—He was suddenly seized with a fit, lasting about three minutes. His face was livid; the mouth firmly closed; his eyes fixed; his breathing slow and gasping; the pulse under 70. 6.30 P.M.—He was quiet, and apparently asleep. At 6.45 P.M. he suddenly expired.

The post-mortem examination was made forty-five hours after death. There was a large quantity of blood in the cavity of the peritoneum, both coagulated and fluid; and the intestines, which were tympanitic, were matted together by coagulum and slight adhesions; the peritoneum was but slightly congested; there were a few patches of ecchymosis in the mesentery. On searching for the right kidney, no trace of it could

be found. The left kidney was imbedded in a mass of coagulum. When this was broken up, the kidney was seen to be completely torn across, the upper third from the lower two-thirds; the two fragments were fully an inch from each other, the interspace between the two torn surfaces being filled up by coagulated blood. The kidney was but little larger than usual; its structure was highly congested, but otherwise normal. The bladder was contracted and empty. There was but one ureter, that coming from the left kidney: no trace whatever of a ureter on the right side; neither could any opening or depression be detected in the wall of the bladder corresponding to the right ureter. The muscles of the loin on the left side were full of extravasated blood. All the other organs of the body were perfectly healthy.

ART. 199.—*Case of Fracture of the Anterior Superior Spinous Process of the Ilium by Muscular Contraction.*

Reported by S. JOY, M.D., and J. WALLACE McWHINNIE, M.D.

(*Canada Medical Journal*, September.)

The patient, Augustine T., aged seventeen, medical student, was engaged in a foot-race where a certain distance had to be run, then to turn and run back. In the exertion of turning he felt something snap in his right hip, walked a few steps and fell. On examination distinct motion and crepitus could be felt by pressure over the process, also by placing the thumb over the origin of the sartorius and rotating the thigh. The fracture extended into the notch below, but there was no great tendency to displacement, save when the leg was abducted, thus placing the sartorius upon the stretch, the process doubtless being partially kept in place by the fibres of the tensor vaginæ femoris arising from this process on one hand, and Poupart's ligament on the other, when tension was applied to the sartorius. The patient was placed in bed with the thigh flexed, the shoulders raised, a bandage being applied to aid in steadying the fracture. It may be as well to state that this position and abduction of the right leg was maintained by bands attached to the posts of the bed. In two weeks the patient made a good recovery without displacement.

ART. 200.—*Remarks on the Treatment of Recent Irreducible Herniæ.*

By C. HOLTHOUSE, F.R.C.S., Surgeon to the Westminster Hospital.

(*The Lancet*, July 16 and 23.)

Whatever may be the condition of a recent irreducible hernia, so long as there is an absence of general symptoms the patient's life is in no danger; herniotomy, Mr. Holthouse says therefore, is not only unneces-

sary but unjustifiable. It is unnecessary because the greater number of these herniæ do, after a longer or shorter period, become reducible, and either return spontaneously or by very slight manipulation. It is unjustifiable because it jeopardizes the patient's life without any adequate advantage, present or prospective. The following case illustrates these propositions :—

CASE.—I was called up one morning, between twelve and one o'clock, to what I was told was an urgent case of strangulated hernia, and requested to bring my instruments with me. I found a tolerably large scrotal rupture; it was tense and somewhat sensitive to handling, and attended with a sensation of dragging in the abdomen. The patient had been the subject of hernia for many years, but had always been able to reduce it till about fourteen hours before I saw him; from this time all the efforts both of himself and his surgeon had proved unavailing. I put him under the influence of chloroform, and tried the taxis for about fifteen minutes, but was not successful in returning the rupture. I declined, however, to operate, because there were really no symptoms of strangulation present: the hernia was for the time irreducible, but it was not strangulated. A pill of two grains of opium was therefore prescribed, and ice was directed to be applied to the tumour. Before eight o'clock the next morning the hernia had gone back of its own accord.

“Were I not restricted to brevity I might cite case after case of a similar character, in which, under like treatment, the rupture went up within twenty-four hours of its becoming irreducible. In other cases, however, several days and even weeks may elapse without this desirable consummation occurring; still the patient's life is not endangered; his general health even is not interfered with; he takes his food as usual; his bowels act regularly, and he can pursue his ordinary avocations: in short, beyond the existence of a tumour, which heretofore could be made to disappear upon pressure, there are absolutely no symptoms.”*

In looking on the reverse picture, Mr. Holthouse writes, the patient, instead of being treated as in the case just cited, is operated on; and Mr. Holthouse admits that the majority of patients so treated recover. But even then, under the most favourable circumstances, the cure is less expeditious than where no operation has been done, while the patient has been needlessly subjected to all the risks which are inseparable from such a procedure. Operations for hernia do not, however, always terminate so favourably. In one case Mr. Holthouse was witness to, sloughing of the wound and of the entire scrotum followed the proceeding; in another, peritonitis, in which the patient's life for several days hung in a balance, and though he eventually recovered, it was after many weeks of suffering and anxiety; and in another, death followed within twenty-four hours of the operation, from the bowel having been cut during the division of the imaginary stricture, and the escape of its contents into the peritoneal cavity. These examples, though few, are, Mr. Holthouse trusts, sufficient to prove the truth of the proposition, that operations undertaken for the reduction of recent irreducible herniæ, unaccompanied by the general symptoms of strangulation, are both unnecessary and unjustifiable.

* For further illustrations of the above facts see Mr. Holthouse's work on *Hernial and other Tumours*, pp. 66-72.

ART. 201.—*Improved Operation for Fistula in Ano.*

By WEEDEN COOKE, M.R.C.S.

(The Practitioner, July.)

Instead of the bistoury impinged upon the finger, *in ano*, and brought down through the sphincter with some difficulty, Mr. Weeden Cooke has employed a scissors, the blades being separately passed into the fistula and rectum, and then connected by means of a movable screw. Mr. Cooke operated with this instrument, which was made at his suggestion by Messrs. Weiss, at the Royal Free Hospital, on the 23rd of April. Having introduced his fingers into the rectum, he passed one blade of the instrument into the fistula up to the extreme point: he then passed into the rectum the other blade up to a corresponding point. The two blades were then connected by a small screw, and with one rapid scissors-action the operation was completed in a second of time. The pain was infinitely less than that produced by the bistoury. As the position required for this operation renders the use of chloroform very difficult, it is well known that the shrinking of the patient often gives trouble to the surgeon, so that the rapidity of this method of operating is important both to the patient and the surgeon; and, in the case referred to, its efficiency was verified by Mr. Cooke's colleagues who were present.

ART. 202.—*Method by which After-treatment in Operation for Fistula in Ano is rendered Unnecessary.*

By J. J. CHISOLM, M.D.

(Baltimore Medical Journal, February.)

Dr. Chisolm proposes, after the fistulous passage has been laid open, a plan of treatment which he says not only protects the patient from hemorrhage, but also does away with the painful daily insertion of lint between the lips of the wound until the latter becomes filled with granulations. Many years ago Dr. Chisolm was induced "to substitute for this annoying, painful, and inefficient dressing, a single application of the liquid persulphate of iron." This was used for the purpose of insuring a surface-sloughing of the sides of the wound, just sufficient to preclude the possibility of the immediate growing together of the recently-cut surfaces, although close apposition be permitted. Long experience has sustained the utility of this application, and this plan of after-dressing, immediately after incising fistula in ano, is now extensively adopted by surgeons in the United States.

"Immediately after making the incision, a large camel-hair brush, or a sponge mop, saturated with the liquid persulphate or perchloride of iron, is drawn through the wound, care being taken to bring the iron styptic cautery in contact with the entire surface. The effect is threefold:—

"1. To cauterize the surfaces and prevent agglutination of the newly-cut walls.

"2. To arrest hemorrhage.

"3. To clot the blood in the wound, and oppose this physical barrier to the approximation of the surfaces.

"Should the hemorrhage be very free, it may be necessary to secure in the wound, for a few hours, a compress of lint, saturated with the iron styptic.

"Beyond this immediate and single application of the iron, no further local treatment will be required. Daily ablutions, either with cold or warm water, as most agreeable to the patient, will be needed for cleanliness. For ordinary cases of fistula in ano, it will not be necessary for the patient to keep the bed, nor even the house, for any length of time; and often business can be resumed the day after the operation."

ART. 203.—*On the Treatment of Hydrocele of the Tunica Vaginalis by Injection of Warm Water.*

By Prof. ALBANESE, of Palermo.

(*Gazetta Clinica di Palermo*, No. 1, 1870; *Gazette Hebdomadaire*, No. 20, 1870.)

Dr. Albanese in this article gives the result of the treatment of eight cases of vaginal hydrocele by injections of water at a temperature of from 42° to 45° centigrade.

The phenomena immediately following the operation are the following:—A slight sensation of local burning, an exudative inflammation, with a fresh effusion of fluid, followed by rapid re-absorption. The injection of warm water was employed with success on a hydrocele which had relapsed notwithstanding a previous injection of iodine.

In one case suppurative inflammation, limited to the connective tissue, was set up; this was probably caused by an infiltration of warm water through the coats of the scrotum.

The following are some brief notes of Dr. Albanese's cases:—

First Case.—Vaginal hydrocele on the right side, of three years' duration, in a patient aged forty. Puncture and injection of water heated to 45° centigrade. The fluid was maintained in contact with the vagina for two minutes; operation followed by a limited supuration of the connective tissue. Cure in twenty-three days.

Second Case.—Patient twenty-three years of age. Vaginal hydrocele on the right side, of two years' duration. Two punctures had been previously made; after the first, iodine had been injected; and after the second the treatment consisted in the insufflation of air. On this occasion 300 grammes of water, heated to 42° centigrade, were injected. Cure in eight days.

Third Case.—Patient fifty-five years of age. A vaginal hydrocele of one year's duration on the left side. Cure in eight days.

Fourth Case.—Hydrocele on the right side, and syphilitic hydro-sarcocele on the left. Equally rapid cure of the hydrocele.

Fifth Case.—Patient fifty-six years of age; a vaginal hydrocele on the

right side, of five years' duration, which had already been treated by iodine injection. Result unknown.

In three other cases a cure was obtained without bad symptoms.

ART. 204.—*On the Employment of Perchloride of Iron and of Manganese in Cases of Necrosis, Fistulous Tracts, and Hydrocele.*

By Prof. GIOSUÉ MARCACCI.

(*La Sperimentale*, 1870 ; *Gazette Hebdomadaire*, No. 30, 1870.)

It is always interesting to recognise a new therapeutic agent. Prof. Marcacci, after some experiments, has succeeded in regulating the mode of employment of the perchloride of iron and manganese, and shows by examples the advantageous results which this agent seems to promise.

The author has employed this perchloride in thirty cases, in varying degrees of concentration. In cases of necrosis it is used at a strength of fifteen to twelve degrees, for the purpose of assisting the expulsion of the sequestrum and cicatrization.

In a case of fistulous canal in the ilio-inguinal region, against which iodine injections had been employed in vain, the perchloride of iron and manganese produced a cure in a few days.

Dr. Marcacci has employed this agent with an amount of concentration varying from twelve to six degrees in the treatment of hydrocele. The quantity of the fluid injected varied from 25 to 120 grammes, according to the capacity of the hydrocele. It seems that the reaction is generally very sharp; in one case, in other respects complex, there was even a formation of pus. The cure, or rather the discharge of the patients, was made in a space of from ten to twenty days. The following conclusions indicate what are the properties of the perchloride of iron and manganese. This agent injected into old fistulous tracts destroys the pyogenic membrane, modifies the condition of the walls, excites their activity, and finally produces cicatrization.

In cases of necrosis it acts upon the limits of the living osseous tissue by exciting vascular activity, and the newly-formed vessels which are developed between the living tissue and the necrosed part facilitate the separation of the sequestra.

In hydrocele the perchloride rapidly modifies the internal surface of the tunica vaginalis, which sac is entirely filled with plastic exudation, the inflammatory phenomena being more or less intense according to the quantity of fluid injected or the degree of its concentration. It is a better plan to inject small quantities. The pain produced by the injection is very slight, but the action of the fluid is no less efficacious on this account.

The concentration that ought to be preferred for the treatment of hydrocele is six degrees; the fluid should be allowed to remain in contact with the tunica vaginalis for about two minutes, as was done in a case of hydrocele radically and completely cured in ten days.

ART. 205.—*On Spermatorrhœa.**

By F. W. TEEVAN, B.A., F.R.C.S.

(The Lancet, August 20.)

The author stated that true spermatorrhœa was rare, and was not usually caused by debauchery. Its most fertile cause was indigestion, for in that complaint the semen became attenuated, and bowels constipated; hence spermatozoa were pressed out by the powerful contraction of the levator ani. Spermatorrhœa might also be caused by some local irritant, such as piles, prolapse of rectum, ascarides, &c. The occasional presence of spermatozoa in the urine was of no consequence; it was their continual daily appearance which established the pathological state. Microscopical examination could alone determine the existence of true spermatorrhœa, and for that purpose the lowest stratum of urine passed during or after defecation ought to be examined. The endoscope was of no diagnostic value in spermatorrhœa; the *bougie à boule* would, however, reveal the state of the veru montanum. The less its sensibility the worse the prognosis. A cure could nearly always be effected by the application of galvanism, or a solution of the nitrate of silver, five grains to the ounce, to the veru montanum. Either of these agents ought to be used every other day till marked benefit ensued. Laxatives and enemata of cold water would also be required. Much walking and bromide of potassium were most injurious to patients suffering from any form of spermatorrhœa. Returning nocturnal emissions were a sign of the abatement of the disease, for so long as spermatozoa were passing away without the patient's knowledge he had no sexual desire, or power, or pollutions. When, however, the spermatozoa were retained for any length of time, their presence would give rise to sexual manifestations. Coitus was most injurious in this complaint, and ought to be forbidden. When the patient was cured, he ought to lead a continent life for three months, as relapses were common. If, at the end of that period, there was evidence of the possession of sexual power, as shown by erection or nocturnal emission, the patient might with safety marry. Mr. Teevan then described false spermatorrhœa, which was very common, and evinced itself as too frequent nocturnal emissions, diurnal emissions, and the passage of semen or prostatic fluid during defecation or periods of excitement.

ART. 206.—*The Abortive Treatment of Urethritis.*

By ALEX. W. STEIN, M.D., of New York.

(New York Medical Journal; and The Medical Record, September 15.)

In a paper on "Pathology and Treatment of Urethritis," Dr. Stein says he has very little to do with the abortive treatment of urethritis,

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle upon-Tyne, August.

for the following reasons:—1st. Because it is extremely seldom that he sees his patients when such a treatment is justifiable. 2nd. That when the opportunity offers it very frequently fails in its object. 3rd. When it fails, it intensifies and prolongs the disease; and 4th. Because of the danger of producing a good deal of mischief. Furthermore, it is not improbable that many of the cases reported as successful instances of this practice would have recovered without going through the painful ordeal of caustic injections. Slight irritation at the meatus, with a little mucous discharge, is not an unfrequent consequence upon excessive sexual intercourse, which usually disappears within thirty-six hours under a very mild treatment, often with no interference whatever. These slight symptoms, therefore, cannot always be regarded as indicating abortive measures.

Of all remedies, the argenti nitras is least adapted for injection into the urethra. If a strong solution of this caustic is applied, it frequently excites violent inflammation.

ART. 207.—*On Internal Urethrotomy.*

By Sir HENRY THOMPSON, F.R.C.S.

(*The Pathology and Treatment of Stricture of the Urethra*, 3rd ed.)

The following are Sir Henry Thompson's conclusions regarding internal urethrotomy:—

“It is indicated in almost all strictures affecting the external meatus of the urethra, and for many cases of stricture situated about the middle of the spongy portion, for which dilatation has proved unsuccessful, it is the most efficient treatment existing. It is useful, also, in some few cases of stricture situated at the bulbous portion, which are not relievable by dilatation. A single incision if not deep, being free from danger, and frequently rendering the stricture perfectly amenable to dilatation afterwards.

“Lastly, it is so in those rare cases in which the urethra is narrowed and indurated at many points or throughout a great portion of its course, dilatation having been found inefficient. But in the two latter classes, the treatment by rupture is, perhaps, as useful in most cases, and much easier to perform.”

ART. 208.—*On External Urethrotomy.*

By Sir HENRY THOMPSON, F.R.C.S.

(*The Pathology and Treatment of Stricture of the Urethra*, 3rd ed.)

With regard to internal urethrotomy, “the cases,” Sir Henry Thompson says, “for which this operation may now be reserved, are mainly those in which large, numerous, or obstinate perineal fistulæ co-exist with old or obstinate strictures. When other treatment has failed, and the fistulæ refuse to heal—even although the patient has withdrawn his

urine for some weeks entirely by the catheter, no proceeding, perhaps, offers so good a chance of cure as this. It is for such cases I reserve it now; and as these are extremely rare, it is seldom necessary to have resort to it. Since the last edition of this work, I have performed it only four times, the last case being in 1868. With nine previously published cases, my entire personal experience amounts to thirteen cases of division of stricture from the external surface upon a slender grooved staff; the old operation, without a guide, I have never had occasion to perform. Not one was fatal; and the results have been, on the whole, satisfactory, and warranted my appeal to the proceeding as a last resource in the worst form of disease. For such, my views of its value remain unaltered, although there are other means, particularly that already considered under the title of 'rupture,' which, as more easy of performance, and involving less risk, should be preferred for the great majority of cases not amenable to dilatation."

ART. 209.—*Treatment of Impermeable Stricture of the Urethra by External Perineal Urethrotomy.*

Under the care of Mr. WILLIAM STOKES, at the Richmond Surgical Hospital, Dublin.

(*British Medical Journal*, November 19.)

The subjoined cases have been reported by Mr. George Hetherington:—

CASE 1.—*Stricture of the Urethra of Ten Years' Duration: External Perineal Urethrotomy: Recovery.*—David E., aged thirty-three, a sailor, was admitted into the hospital under Mr. Stokes's care on Dec. 18th, 1869, suffering from a close stricture of the urethra. He attributed it to an attack of gonorrhœa, which he contracted ten years previously, and which he subsequently much neglected. At the time of his admission into hospital, he was only able to void his urine drop by drop. On examination, Mr. Stokes ascertained the existence of a dense stricture of the urethra at the region of the bulb, and for upwards of ten days he made frequent but unavailing attempts to pass the smallest catheter or bougie. Owing to an attack of retention of urine which supervened after three unsuccessful attempts to pass an instrument, Mr. Stokes determined to perform external urethrotomy. On the afternoon of Jan. 2nd, the operation was performed. Owing to the failing light, the great depth of the perinæum, the violent struggles of the patient, on whom chloroform had but little effect, and the great length of the stricture, it was attended with extreme difficulty. The operation (which was Arnott's modification of Hunter's method) succeeded perfectly, and Mr. Stokes was eventually able to introduce a large silver catheter and to draw off an enormous quantity of foetid urine. The instrument was then secured to the bladder and the patient sent to his bed. Five days after the operation, a No. 6 gum-elastic catheter was introduced without any difficulty, and the wound in the perinæum was found to be rapidly closing. Ten days after this the perineal wound was found to be not larger than the head of a large pin, and this Mr. Stokes succeeded in effectually closing by a plastic operation. On the 28th February the patient left the

hospital. The largest catheter could be introduced without the slightest difficulty, and the perineal opening was completely closed.

CASE 2.—*Impermeable Stricture of the Urethra: External Perineal Urethrotomy: Recovery.*—Evan R., aged forty, a slate-shipper, a native of North Wales, was admitted into the hospital under Mr. Stokes's care on the 30th June, 1870, on the recommendation of Dr. Roberts, of Port Madoc, North Wales. The patient stated that he had been suffering many years from a close stricture of the urethra, which he attributed to a neglected gonorrhœa. Both previously and subsequently to his admission into hospital, numerous attempts were made to introduce a catheter; and after a time it became obvious that external perineal urethrotomy offered the only means of introducing an instrument into the bladder. On Thursday, July 21st, Mr. Stokes performed the operation in the manner recommended by Guthrie. The operation was, as usual, most difficult and protracted, but eventually he succeeded in efficiently dividing the stricture and introducing a large-sized instrument. The healing of the wound in the perinæum was very protracted, but ultimately it completely united. For upwards of eight weeks, large-sized elastic instruments were kept in the bladder without causing the slightest annoyance or irritation of any kind. After this, the patient was enabled to pass without any difficulty one of the largest of the flexible gum-elastic French catheters. The patient then returned in health and spirits to his native country.

ART. 210.—*On the Treatment of Strictures of the Urethra by the Introduction of Horse-hair and Perforated Bougies.*

By Dr. MITSCHERLICH, of Berlin.

(*Archiv für klinische Chirurgie*, Bd. xi. heft 2; *Gazette Hebdomadaire*, No. 24, 1870.)

In the hands of Professor Mitscherlich, the treatment of strictures by dilatation with whalebone and elastic bougies, has succeeded in the majority of cases. With this treatment the calibre of the canal has almost always been re-established in from four to eight weeks. The author has had opportunities of seeing persons who remained free from stricture at the end of eight years, and in whom there was no tendency to a return of the stricture.

There are, however, some cases in which the stricture seems to be impassable by ordinary instruments, or even by the smallest bougies.

In cases of this kind Dr. Mitscherlich uses instruments of a very simple character. He uses as fine bougies hairs from the horse's tail. Since the use of these he has not met with an impassable stricture, and has always been able to reach the bladder, and even to bring about dilatation of the stricture. The horse-hair serves as a conducting bougie upon which may be glided special very fine sounds, open at their extremities. A horse's hair is finer than any bougie, and it possesses an elasticity and a certain amount of solidity which allows of its introduction without fear of lacerating the urethra. For this reason it is far preferable to bougies made of whalebone.

The instruments used by Mitscherlich consist in the first place of

hairs from the horse's tail, each about two feet in length. He can readily obtain a solidity and greater resistance in these bougies by sticking together, by means of varnish, two or more of the hairs.

In the second place Mitscherlich uses elastic bougies open at their extremities. These instruments ought to present at their extremities a diameter of about half a line, and their canals should be smooth and regular. When used with caution they cannot cause false passages or produce any other kind of lesion. The horse-hair being soft and flexible, will bend and double upon itself rather than perforate the urethral canal, and the bougie when applied closely over it will not deviate; finally but very slight irritation is caused by the bougies.

The author relates a case in which the patient had vesical catarrh, resulting from an old stricture, and also extreme irritability of the urinary canal. In this instance he gradually succeeded in penetrating with large instruments into the bladder.

In another case the bougies remained in the urethra for several days, without causing any bad symptoms.

Out of nine cases thus treated by Dr. Mitscherlich, there has been one only in which the treatment was not attended by complete success. During an absence of the surgeon, the patient became discontented and entered an hospital at Berlin; the stricture was regarded as an impassable one and treated by external urethrotomy.

Dr. Mitscherlich reports, in support of his mode of treatment, two examples of complete success, obtained in two men, one forty-five, and the other thirty years of age, and also the following example of traumatic stricture:—

A soldier, G. H., received a gunshot wound in 1849. After some years an attempt was made to extract a ball which had passed into the soft parts of the perineum. The patient having been placed in the lithotomy position, under the influence of chloroform, an incision was made over the ball, which was seized with forceps, but afterwards escaped, probably into the cavity of Douglas, and could not be found again.

At the time of the operation the patient passed urine both through the canal and by the wound in the perineum. In less than a year there was a very resistant and very narrow urethral stricture. In the spring of 1868, Dr. Mitscherlich succeeded in passing a very fine whalebone bougie into the bladder. The patient was very sensitive, and suffered from continual vesical catarrh; still elastic bougies and very fine instruments could be passed into the bladder. The patient, however, did not attend regularly, and the stricture became so narrow that he could not introduce, except with the greatest difficulty, a horse-hair bougie, and afterwards a bougie of very fine whalebone. The horse-hair was then used as a conductor, on which perforated instruments of increasing size could be passed into the bladder. The period necessary for bringing about a cure was long on account of the resistance of the stricture, and because the occupation of the patient caused the treatment to be less frequent and less efficacious than was desirable. The final result, however, could not have been more satisfactory, since sounds of the largest size could be passed. The vesical catarrh was but slightly relieved during the treatment, but it must be admitted that with stricture

of so long a duration, there is produced in the mucous membrane of the bladder morbid changes which can yield only to a prolonged course of treatment.

Dr. Mitscherlich's proceeding, by its very simplicity, will attract the attention of those who, although they may hold theoretically that impassable stricture does not exist, are still aware that in practice there are strictures which cannot be surmounted without the greatest difficulty. Even when one has decided upon internal urethrotomy, the employment of horse-hair offers advantages which cannot be despised, since it may serve as an indicator for the urethrotome or dilator, and thus enable one to avoid external urethrotomy.

ART. 211.—*An Analysis of One Hundred and Forty Cases of Urinary Stricture.*

By JOHN D. HILL, F.R.C.S., Surgeon to the Royal Free Hospital.

(*British Medical Journal*, November, 26.)

At a meeting of the Medical Society of London, on November 14th, Mr. Hill read a paper on an analysis of 140 cases of urinary stricture. Of these, 20 had been submitted to Syme's operation of perineal section, and 120 to Holt's operation of forcible dilatation. The cases were classified as—1st, single stricture; 2nd, multiple stricture; 3rd, complicated stricture. In these three classes Holt's operation was performed. A fourth class comprised cases of cartilaginous non-dilatable stricture, usually the result of injury; and these were treated by perineal section. The strictures were described as nodular and bead-like to the touch, or as fusiform or elongated. Holt's operation was performed in 69 cases of stricture on the bulbo-membranous portion of the urethra; 31 cases of multiple stricture were also cured by the same operation. In the 120 cases there were but two deaths, from congestive pneumonia. The bladder, urethra, and kidneys of one of these fatal cases were shown. No laceration had taken place where the stricture had been split by the instrument. The patients were usually discharged at the end of a week or ten days, with instructions to pass a No. 11 catheter occasionally. Cases where no instrument could be passed through the stricture, as well as those of stricture where the passage of an instrument was followed by rigors, were treated after Syme's plan. The loss of blood was small in the operation, and rarely did any unhealthy action occur in the wound. If there were any relapse, a second operation was performed. Mr. Hill laid great stress on preparatory treatment.—Mr. B. Holt said that the first class of cases were simple and easily cured. The real value of the operation was proved in cases that had been condemned as incurable. An officer from India had come under his care with stricture and fistula in the perinæum, the buttock, and the groin. He had to sit over a large pan whenever he passed urine, as it came from him as from a watering-pot. This man's stricture was split; the fistula gradually treated; and he quite

recovered. In another case the patient was aged seventy-six, and for years he had laboured under a stricture, which was so tight that no instrument could be introduced. By accident, however, Mr. Holt was enabled to pass a very small instrument, and was then able to split the stricture. In three days the patient was enabled to go into the country relieved of his stricture. Mr. Holt considered his operation applicable in all cases where an instrument could be introduced, but it was hazardous in cases where the kidneys were diseased. He very nearly lost a patient who had fatty heart and diseased kidneys, after operation. The man had a very dense stricture, and after it had been operated on he had a rigor; next day he was cold and pulseless, and the secretion of urine had ceased. It was only by great care that he was brought out of his precarious state, as for some time he had all the symptoms of uræmic poisoning. When Mr. Holt's directions were followed, relapse never took place, and he believed, from the few opportunities he had of making post-mortem examinations, that in his operation the mucous membrane was not torn; hence there never was infiltration of urine. Mr. Holt never left the catheter in the bladder except in cases of traumatic stricture.

ART. 212.—*A Case of Amputation of an Inverted Uterus.*

By Dr. WILDE.

(*Archiv für klinische Chirurgie*, xii., p. 330, 1870.)

The patient, who on admission was twenty-five years of age, had been married when nineteen years of age, and gave birth to two children in quick succession. The first labour was normal, in the second labour, which in other respects was normal, the expulsion of the placenta was delayed. The midwife in pulling down the umbilical cord dragged to light both placenta and uterus; but replaced the latter without delay. The patient afterwards suffered from local and general pains (hysterical). On examination with the speculum there was found distinct inversion of the womb, the fundus of the organ being nearly round. Dr. Wilde attempted several times, both during and between the menstrual periods, to reduce the protrusion under chloroform, but without success. As the patient begged for a relief from her suffering, Dr. Wilde, after having described the dangers of the proceeding, resorted to amputation of the uterus. There seemed to be no danger of wounding any invagination of intestine. In order to prevent hæmorrhage, Dr. Wilde took the precaution to pass through the neck of the uterus above the intended line of incision two sutures, which were to be afterwards fastened if necessary. The left hand was passed into the vagina after the sutures had been secured externally, and the uterus cut through with a long curved knife, directed by the fingers of the left hand, which was applied to the sides of the neck of the womb. The stump contracted immediately, and a small roundish projection only left in the region of the os uteri. There was no bleeding, and for this reason the operator did not tighten the sutures. The operation was followed by much pain in the abdomen. On the third day all feverish symptoms had ceased; on

the eighth day the patient was able to get up; on the thirteenth day the lips of the os uteri could be seen lying in contact. The removed portion of uterus was one inch and a quarter in length; the Fallopian tubes were quite unaltered, and permeable by a sound. Eighteen days after the operation menstruation took place, which however was slight and of short duration. The patient was soon afterwards discharged as cured.

ART. 213.—*On the Effects of Congenitally Small Urinary Meatus in the Male.*

By FURNEAUX JORDAN, F.R.C.S., Surgeon to the Queen's Hospital, Professor of Surgery at Queen's College, Birmingham.

(*British Medical Journal*, November 26.)

At a meeting of the Birmingham and Midland Counties Branch of the British Medical Association, on November 10th, Mr. Furneaux Jordan read a paper on the "Effects of Congenitally Small Urinary Meatus in the Male." He said that cystitis is one of the most frequent of surgical diseases. At the same time, it is perhaps invariably the result of some preceding pathological condition. The commonest causes are those which tend to impede the urinary flow. Such an impediment, which is commonly overlooked, although it occurs not infrequently, is a congenitally small meatus. The *lower* part of the meatus is closed. Over the closed part there is sometimes, but not always, a line of depression. The opening which is left is often not a third or a fifth of the size of the normal meatus. This small aperture is alone a sufficient cause of cystitis; but, added to gleet, or acid urine, or vesical atony, or perhaps slight paralysis from spinal disease, or enlarged prostate, it very frequently gives rise to cystitis, which otherwise would not occur. In such cases, cutting the meatus with a director or bistoury removes the bladder-symptoms. Mr. Jordan then referred to certain other ill effects, especially simulated stone in the bladder in children with congenitally small meatus. After alluding to Mr. Paget's views on "stammering of the bladder," the paper closed with this question: In certain cases of slight but persistent and obscure cystitis, may there not be a congenital narrowing of the vesical orifice of the urethra?

ART. 214.—*On Twenty Cases of Stone in the Bladder.**

By W. F. TEEVAN, B.A., F.R.C.S.

(*The Lancet*, August 13.)

The author briefly related the particulars of all the cases, now twenty in number, in which he had operated for stone. Nine of the patients

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association at Newcastle-upon-Tyne, August.

were adults, and eleven boys. Six of the adults were operated on by lithotrity, and three by lithotomy, the latter operation being necessitated in each case by the great size of the calculus. All the boys were operated on by lithotomy. Eighteen of the patients recovered, and were permanently cured, and two died. When possible, lithority ought always to be preferred to lithotomy in adults. For the successful performance of lithotrity, the stone ought to be of moderate size, and the bladder not too much diseased. The removal of a calculus by lithotrity was one thing, and the cure of the patient another thing; for there were sufferers now alive in whom surgeons had successfully removed the calculi by the lithotrite, and yet failed to cure the patients—a state of chronic cystitis and paralysis remaining. In old men the lithotrite ought only to be used for a couple of minutes at a sitting, the patients being merely confined to bed for a day or so in each week. The confinement of old men to bed was perilous. In young men large phosphatic stones might be crushed with safety. Extensive heart disease forbade lithotrity, as patients had lost their lives whilst straining in passing fragments. Much information was yet required before we could ascertain the extent to which the introduction of the lithotrite had reduced the mortality after operations for stone. The median operation of lithotomy was only justifiable for small stones, and those had much better be crushed. In lateral lithotomy the stone ought to be cut and not torn out. There was no such thing as dilatation of the prostate: it could be torn, but not dilated. The external incision ought to commence low down, as thereby less blood was lost. The internal incision ought to be free, as the chief dangers incident to lithotomy were phlebitis, and pyæmia, resulting from the bruising of the parts in tearing out the stone. A rectangular staff ought to be used, and held with two hands, the lower resting on the pubes. The forceps was unnecessary in children, and often in adults, for in the former the stone could be better removed by the left forefinger, and in the latter a simple polypus forceps ought to be used, when wanted, in preference to the heavy and unwieldy instrument now employed. The introduction of a tube after lithotomy was useless if there were a good assistant in charge of the case. Mr. Teevan concluded by relating the results of a personal examination of the various pathological museums, and of a series of experiments which he had performed on the dead subject.

ART. 215.—*On the Cure of the Chronic Perforating Ulcer of the Bladder by the Formation of an Artificial Vesico-vaginal Fistula, as Practised by the late Sir J. Y. Simpson.*

By LAWSON TAIT, F.R.C.S.E.

(*The Lancet*, November 26.)

Much as Sir James Simpson did to advance the profession to which he was devoted, it is to be feared that there has died with him a great deal that would have been of infinite value to humanity had it been saved for us. Active as he was in recording, and indefatigable in making re-

search in the art of healing, those who knew him can easily understand that there were numberless observations made and conclusions arrived at by him which have been left unpublished. It is with the view of saving a little of these that Mr. Tait ventures to refer to two cases in the treatment of which he was associated with Sir James, and in which the successful operation employed was a device original with him, and, as far as Mr. Tait has yet been able to discover, quite new in the annals of surgery.

The first was the case of a young unmarried woman who had been in robust health until her bladder symptoms commenced. These consisted principally of intense pain round the neck of the bladder, bad at all times, but especially so during the act of micturition. A few minutes of comparative ease was obtained after the bladder was emptied; but the pain steadily increased as the viscus became distended, and she had again to pass through the terrible ordeal of its evacuation. This state of matters went on for many months, and every kind of sedative treatment was adopted, all kinds of injections into the bladder tried, and the ingenuity of her many medical attendants taxed to the utmost, without avail. The urine was always alkaline, but only slightly so; and it contained but a very small quantity of pus, with a trace of albumen. She at last was placed under the care of Sir James Simpson; and, as he and Mr. Tait came one day together from her bedside, Sir James reasoned to the effect that the indication in her case was to put the bladder in a state of complete physiological rest; and to secure this it would be necessary to establish an artificial fistula. He carried his idea into execution, and with the most brilliant result; for the pain was at once relieved, and in a few weeks the ulcer was healed, the fistula closed, and the woman returned to her country home perfectly recovered.

The second case was that of a sempstress. All other treatment having failed, an artificial fistula was established, with a result equally satisfactory as that obtained in the other case.

The performance of the operation is easy enough: it is effected by introducing a grooved staff along the urethra, and slitting up the posterior fourth of the canal and about an inch of the posterior wall of the bladder. There is no difficulty in getting the fistula to close after the ulcer has healed; the difficulty is to get it to remain open long enough. The *rationale* of the operation is quite philosophical; but in principle it is unlike anything in surgery, except the establishment of an artificial fistula in the male perineum in order to promote the successful performance of an extensive urethro-plastic operation, which Sir Henry Thompson was kind enough to show Mr. Tait a few months ago.

The special form of ulceration by which these two women have been affected is referred to briefly by Rokitsansky as a limited perforating ulcer. In anatomical characters, as well as in semeiology, the ulcer closely resembles the perforating ulcer of the stomach; and Rokitsansky tells us that in the bladder, as in the stomach, one of the means of the fatal issue is by complete perforation ending in peritonitis. It is somewhat curious that all of the four cases which have come under Mr. Tait's own notice have been women, and comparatively young—circumstances which, together with others, remove it far from the ordinary catarrhal ulceration of the mucous membrane of the bladder. Of many post-

mortem examinations of cases of the latter disease which Mr. Tait has made, he does not remember ever to have seen one in which the muscular coat was affected; the mucous coat seems to be invariably dissected cleanly off the subjacent tissue, and the ulceration is limited neither in extent nor locality. The perforating ulcer seems most frequently to exist at the neck of the bladder.

ART. 216.—*Elephantiasis of Scrotum and Leg, treated by Removal of the Tumour and Ligature of the Femoral Artery.*

By J. FAYRER, M.D.

(*Medical Times and Gazette*, May 28.)

Professor Fayrer relates a case of elephantiasis of the scrotum and left leg, in which he removed the former, and about three months afterwards tied the femoral artery in the left leg. Dr. Fayrer had previously described (*Clinical Surgery in India*, p. 688) two cases of elephantiasis of the leg treated by ligature of the femoral artery. "The result in these cases was not encouraging. The first died of pyæmia on the nineteenth day. The limb had diminished considerably, and so far it promised to do well; his death prevented any opinion being arrived at as to the probability of permanent decrease in the hypertrophy, so that, beyond the fact of an immediate diminution in the swelling, as a result of the operation and the consequent bandaging, nothing definite could be arrived at from this case. My own impression is, that the reduction of the swelling is due more to the bandaging and rest in the recumbent posture than to the ligature of the artery, and I have good reason for believing so, as I have frequently observed in the elephantoid legs of those who have been operated on for scrotal elephantiasis that, with the necessary rest in bed after the operation, the leg diminished considerably, but that it increased again when the recumbent posture was no longer continued. Elephantiasis of the leg, like elephantiasis of the scrotum, is the local expression of a constitutional disorder, and I do not see why temporary deprivation of the blood-supply to the limb should have any permanently curative effect on the local disease. The anastomotic circulation provides for the nutrition of the limb, and, indeed, so far it is probable that the part especially diseased, the cutis, is even more vigorously supplied than under ordinary circumstances, for the result of the cutaneous hypertrophy must certainly be an enlargement of the cutaneous blood-vessels, and as these are concerned in carrying on the anastomotic circulation when the main trunk is obstructed, it appears hardly probable that this condition can be conducive to a curative action in the affected part, nor is it at all probable, I think, that a mere change in the mechanical arrangements for the distribution of blood to the limb can have any effect in removing what is only a local symptom of a constitutional disease.

"The result of the second case tends, I think, to show that this view is correct, for whilst there was a marked diminution at first, after the

artery was tied the swelling gradually returned, as the man recovered from the operation, and when I saw him some time afterwards he was just as bad as when I tied the artery.

"The third case (that I now record) is not more satisfactory. There was the same temporary diminution of size during the rest and confinement to bed after the operation; but when he recovered the swelling slowly returned, and he is now, six months after the operation, just as bad in respect of elephantiasis of the leg, as he was when the femoral artery was tied.

"I have before referred to the improvement that takes place in the constitutional health after the removal of a scrotal tumour—the absence of the periodically recurring paroxysms of elephantoid fever and the consequent cachectic condition it induces. The removal of an ever-present source of blood dyscrasia is attended with the best results, and patients have frequently told me that the great relief they had obtained was not so much due to the removal of the abnormal growth, as of the periodic fever which caused them such great distress.

"In this case the same improvement took place, and the elephantoid fever was removed with the tumour, but notwithstanding the amendment in the general health, the leg returned to its original size, and thus proved that, in this case, as in others, the ligature of the artery had not been followed by any permanent benefit to the limb."

ART. 217.—*A Case of Large Serpiginous Phagedænic Chancre cured by a Provoked Attack of Erysipelas.**

By M. DESPRÈS.

(*Archives Générales de Médecine*, Août, 1870.)

In this case Dr. Desprès, after having employed all forms of cauterization, applied a dry dressing and exposed the patient to cold in order to excite an attack of erysipelas.

M. Desprès maintains that the cause of the persistence of serpiginous phagedænic chancres is the retraction of the cicatricial tissue, which tears the recent cicatrix formed over the more recent ulcerations. These new wounds bathed in pus are transformed into phagedænic ulcers. In the formation of these sores the lymphatics play a chief part; one can conceive then how the ulcerations may become persistent. In the subject of the present case the chancre, which occupied the buttocks, was dragged upon in the movements of the thighs, which action added much to the serious effects of the retraction of the cicatricial tissue.

In the cure of this lesion three conditions were necessary: 1st, to weaken the retractility of the tissues of the cicatrix during the period necessary for the cure of the ulcers; 2nd, to restrain all movements of flexion; 3rd, to produce temporary obliteration of the lymphatics about the ulcerated parts.

These conditions were fulfilled during fifteen days, in consequence of

* Communicated to the Académie de Médecine.

the attack of erysipelas. At the end of this period all the ulcerations were healed.

The febrile condition weakened the contractile power of the cicatricial tissue, the pain prevented any movement of the limb, and, finally, the erysipelatous erysipelas obliterated for a time the lymphatic vessels.

ART. 218.—*On the Diagnosis and Prognosis of Venereal Bubo.*

By Prof. ZEISSL.

(*Allgemeine Medizinische Zeitung*, No. 8, 1870.)

Inguinal buboes may be confounded with other kinds of swelling occurring in the groin. To these belong:—1. Epididymitis attacking a testicle retained in the inguinal canal. 2. Hernia. 3. Varix of the saphenous vein at the place where this vessel joins the femoral vein. The chief diagnostic indication for deciding upon inflammation of a retained testicle is the absence of this organ on the corresponding side of the scrotum; moreover the peculiar pain on handling the swelling, and finally, the peculiarly characteristic consistency of the tumour in the inguinal region, enable one to distinguish it from a glandular enlargement; the latter either manifests a much firmer consistency, or, when suppuration is discovered, generally fluctuates on examination. The symptoms of hernia are the following:—The tumour is soft, and can be reduced by pressure. It enlarges when the patient stands up, coughs, or makes any straining movement. It becomes smaller and disappears altogether when the patient is placed in the horizontal position, or when a certain amount of pressure is applied to it. When the hernia is an enterocele one may hear borborygmi on pressing it. The protruded portion of bowel returns into the abdominal cavity with a gurgling noise. When the hernia is strangulated, among the general phenomena colicky pains and considerable flatulence are present. If the tumour be examined by palpation no impulse can be felt on the patient's coughing or sneezing. Besides, as in incarcerated enterocele, gas is generally contained in the confined piece of intestine, the tympanitic or clear sound produced by light percussion is of diagnostic importance. If the strangulation has lasted for some time symptoms of inflammation leading to gangrene and stercoraceous vomiting will be present, whilst the tumour itself will become emphysematous, and of a dark red colour.

The following are the diagnostic signs of varix in the inguinal region:—By compressing the vena saphena below the swelling the flow of blood is arrested, and the varix reduced in size; on the other hand, by compressing the vein above the varix it becomes tense and distinct.

Prognosis of bubo, especially of the bubo associated with chancre.—The character and future course of the commencing bubo cannot be determined with certainty. In cases of co-existent or pre-existent soft chancre, it may be conjectured, with greater or less certainty, that the commencing bubo has resulted from the absorption of the chancreous pus, and it will almost invariably undergo suppuration. If, however,

the bubo does not make its appearance until after the cicatrization of the chancre, one is justified in supposing that pus was conducted to the affected gland from the chancreous ulcer at a period when the discharge from the latter seat was no longer virulent, and, this being the case, suppuration of the bubo is no longer to be regarded as inevitable.

With regard to the prognosis of chancre bubo, the following points are to be taken into consideration:—Individuality: the conduct of the patient, and the nature of the chancre, play an important part in the prognosis of buboes. In scrofulous, tuberculous, or cachectic subjects, the suppuration and cicatrization of buboes always take a dubious form. forcible movements increase the inflammatory action and the tendency to suppuration. If the coexistent chancre has taken on the phagedænic character, or if, in other words, the patient has become the subject of phagedænicism, the suppuration bubo likewise will become phagedænic. The greater the number of affected glands, and consequently of buboes, the larger will be the suppurating cavity and the more tardy the process of cicatrization.

Gangrenous buboes, as is evident, are attended with the most danger. Hyperplastic enlargement of the fibrous capsule of the affected gland, and protrusion of the gland itself into the cavity of the abscess, retards cicatrization for a long period.

Weak, anæmic, and scrofulous patients, especially when they live in unwholesome rooms, are not unfrequently subjected to erysipelatous and gangrenous inflammation of the subcutaneous cellular tissue in the neighbourhood of what was from the first an unhealthy-looking swelling of the inguinal glands. It is well known that cases of suppurative inguinal glands supply the largest contingent to the lists of mortality of venereal patients.

(C) CONCERNING THE UPPER EXTREMITY.

ART. 219.—*Specimen of Dislocation of the Wrist.*

By JAMES E. ADAMS.

(*Medical Times and Gazette*, December 3.)

At a meeting of the Pathological Society on November 15th, Mr. James E. Adams exhibited a specimen of dislocation of the wrist. This specimen was taken from the body of an old woman in the dissecting-room of the London Hospital College, and is without any history. All the tendons were normal in their insertions and relations, lying in healthy synovial sheaths, and there was no sign of any old inflammatory mischief about them or the ligaments. When the tendons and annular ligaments were removed, it was observed that the proximal end of the metacarpal bone of the first finger was of normal shape and size, and fitted into a depression on the inner side of the articular end of the radius. The end of the middle bone of the second finger was opposite to the interval between the radius and ulna, but articulated with a small piece of bone, which was probably the remains of the

os magnum. The fifth metacarpal bone articulated with the unciform, which articulated closely with the inner side of the ulna. On the radial side of the unciform a process of bone reached from the ulna to the base of the fourth metacarpal bone. This Mr. Adams took to be the styloid process of the ulna. On the palmar surface the unciform process and the pisiform were very close together, and so placed that a line passing through the unciform process and the centre of the palmar bone had a direction parallel to the long axis of the ulna. The metacarpal bone of the thumb articulated with the remains of the trapezium. A horizontal section showed the scaphoid and semilunar, and probably the cuneiform, to be fused together, the cancellous texture being continuous. The inferior radio-ulnar articulation was also partially ankylosed. The remains of the carpal bone, projected in front of the fifth metacarpal bone and the ulna, inclined to one another at an angle of about 130° .

ART. 220.—*Observation on Fractures of the Sternal
Extremity of the Clavicle.*

By ROBERT W. SMITH, M.D., Professor of Surgery in the University of Dublin, Surgeon to the Richmond Hospital, &c.

(*Dublin Quarterly Journal*, August, 1870.)

Having remarked how scanty, and, at the same time, incorrect is the literature of the subject of fractures engaging the sternal end of the clavicle, Dr. Smith proceeds to examine the anatomy of the costo-clavicular and sterno-clavicular ligaments, and afterwards to give details of five cases of fractures of the clavicle at its sternal extremity.

The conclusions arrived at from a consideration of ten cases are briefly the following:—

In every instance a displacement *forwards* existed, and the deformity was always connected with the external, or acromial fragment of the bone.

In cases where this displacement forwards was the only sign present, the fracture was usually found close to the joint. When, however, a threefold displacement—viz., *forwards*, *inwards*, and *downwards* existed, the seat of lesion was generally external to the costo-clavicular ligament. The amount of displacement downwards, Dr. Smith regards as a tolerably accurate measure of the distance of the fracture from the sterno-clavicular articulation, this displacement being less the nearer the lesion of the bone is to the joint.

With respect to *intra-rhomboid fracture*, the author is disposed to say that no evidence has yet been adduced of the actual occurrence at all of this injury.

ART. 221.—*Removal of a Tumour of the Lower Part of the Humerus.*

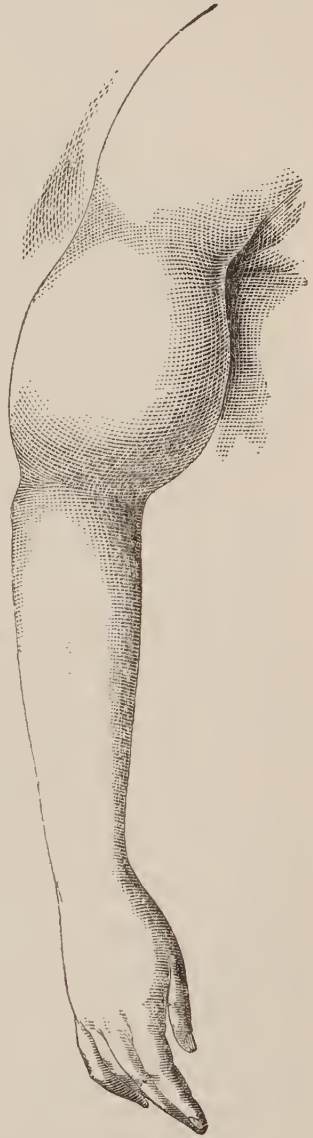
By Sir WILLIAM FERGUSSON, Bart., F.R.S., Sergeant Surgeon to the Queen, and President of the Royal College of Surgeons of England.

(*A System of Surgery*, 5th ed., pp. 751.)

In the new edition of this well-known work is recorded the following remarkable and unique example of removal of a tumour of the lower part of the humerus, involving the whole thickness of the bone, with preservation of a useful limb:—

“In 1864, a woman, twenty-four years of age, came under my care at King’s College Hospital, with a firm tumour involving the whole thickness of the humerus, about the size of a large lemon, and about three inches above the elbow-joint. It had grown steadily for about two years, and in consequence of excessive pain, amputation had been recommended by one of the most competent authorities in London. But it was impossible to look otherwise than with pity on a fine hand and fore-arm. There seemed no malignancy, and therefore no hurry, and I advised delay, although I could not anticipate any other step should the tumour increase and give further distress. It did increase, and a softening seemed to occur in the mass, so that movement could be detected, as if fracture had taken place. There now seemed necessity for action, and I resolved on a step which I had occasionally meditated in reference to tumours in long bones. Instead of amputation, I proposed to remove the tumour by dividing the humerus above and below—being encouraged to this step under a strong impression that the growth was not malignant. Fig. 1 represents the appearance of the arm at the time of her admittance into the hospital. The operation was performed in February, 1865. The chief risk was that of opening the elbow-joint, owing to the proximity of the tumour. This was happily avoided, however. The incisions were made on the sides and back part of the arm in the form of an A, and so close to the tumour that besides the skin and muscles, peritoneum and bone only were divided. Fig. 2 will give an idea of the thickened bone and fissure running across where it had

FIG. 1.



softened and broken. One section of the preparation is in the Museum of King's College, the other at the College of Surgeons. The wound healed kindly. There was no osseous union, and the limb if left alone dangled uselessly; but, by applying a leather case to keep the arm steady, the fore-arm, hand, and fingers at once became of much service. On a recent examination I find that she has laid the splint aside, and prefers using the hand as the servant of the left, with which she does the most active work. She has often expressed thankfulness for the preservation of her hand, in which the power of flexion and extension seems almost perfect. This case was published in the *Medical Times and Gazette* of the 4th of March, 1865.

FIG. 2.



ART. 222.—*Excision of the Shoulder-Joint.*

By REGINALD HARRISON, F.R.C.S., Lecturer on the Principles and Practice of Surgery at the School of Medicine, and Assistant Surgeon to the Royal Infirmary.

(*Liverpool Medical and Surgical Reports*, October.)

The following case of excision of the shoulder-joint is introduced as affording a good example of the kind and degree of relief that is afforded under such circumstances:—

The patient, a dock labourer, was admitted last year under Mr. Harrison's care at the Royal Infirmary, in consequence of a very acute inflammation of the right shoulder-joint, traceable to an injury received in lifting a heavy weight. In spite of active treatment by Dr. Cavanagh, under whose care the patient first was, the symptoms increased in severity, and disorganization of the joint was imminent. When admitted into the Infirmary there was great constitutional disturbance. An abscess extending to within a short distance of the elbow-joint was opened shortly after his admission, from which a large quantity of matter continued to discharge. Distinct grating of the articular surfaces was soon felt. As the patient became hectic and much exhausted, it was agreed, after a consultation, to excise the joint. Mr. Harrison had considerable doubt however as to the result; observation leading to the conclusion that in acute joint-destruction the condition is unfavourable for section of the bone in the contiguity of articulation, and a consequently greater liability to pyæmic infection. In the case of the shoulder and hip the degree of danger from this circumstance is certainly less than in other joints, as the section is usually confined to the single bone on the distal side. As there was no alternative but amputation, it was decided to excise the head of the humerus.

The operation was performed on August 31st, 1869.

The single incision was adopted, commencing a little external to the coracoid process, and extending downwards for about four inches. The long tendon of the biceps was turned aside and the capsule of the joint

opened. The muscles attached to the two tuberosities were then divided, and the head of the bone sufficiently protruded to admit the passage of a chain saw behind the surgical neck, by which the section of the bone was effected. An incision over the spine of the scapula permitted the removal of some necrosed bone, and completed the operation.

The patient made a very good recovery, and has now been engaged as a labourer in a cotton warehouse for four months.

He came to see Mr. Harrison on August 29, 1870 (two days short of the anniversary of the operation), and told him that his arm was almost as useful as the other. He can lift a 56lb. weight from the ground, and raise a chair a considerable height to the level of the shoulder. His general health is perfect.

Judging from other excisions of the joint that Mr. Harrison has had an opportunity of examining, he associates the preservation of the form with the adoption of the single anterior incision, which is the one usually practised by the surgeons of the Royal Infirmary. It will be found best figured in Bell's *Manual of Operative Surgery*. The advantage of this incision chiefly lies in its avoiding any lesion of the tendon of the biceps or the deltoid muscle, the main supports to the articulation after the severance of the muscles attached to the two tuberosities. Some surgical authorities recommend exposing the joint by making a flap of the deltoid; others a perpendicular incision through the thickness of the muscle, commencing from the tip of the acromion. A comparison of results will, Mr. Harrison believes, be found much in favour of the plan adopted in the present instance.

(D) CONCERNING THE LOWER EXTREMITY.

ART. 223.—*Case of Femoral Aneurism Cured by Rapid Pressure.**

By JOHN RUSSELL, M.R.C.S.

(*British Medical Journal*, September 24.)

The patient, Matthew Powell, aged thirty-eight, was a puddler and furnace-man. A swelling was first noticed in the right groin after a fall against a pig of iron twenty years ago. No inconvenience was, however, felt till a year before admission into the infirmary in May, 1870, when, after a strain, the swelling increased and became painful. Pulsation was first noticed seven months before his admission. The swelling extended upwards to Poupart's ligament, and five or six inches below; its size was about that of a clenched fist. After two days' rest in the recumbent posture, digital pressure was made on the external iliac artery, and was kept up by the resident staff of the Newcastle Infirmary (eight in number) in turns of twenty minutes each, for twenty-four hours. The temperature of both limbs fell somewhat; the tumour became

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-on-Tyne, August, 1870.

slightly harder, but the pulsation was unchanged. The patient complained of much pain during the compression, and took two grains of opium and two and a half grains of morphia. On May 31st, at 10.45 A.M., a common horseshoe tourniquet was applied over the left common iliac artery, the patient being deeply under the influence of chloroform. There was difficulty in applying the compression in consequence of the slipping of the instrument; but the horseshoe tourniquet was found to answer better than others. At 3.15 P.M., the tourniquet was relaxed; pulsation was much less, and the tumour was harder. At 5 P.M. it was again relaxed, and ether-spray was applied. At 6 P.M. the pulsation was less; distal pressure was now applied in addition. At 7.30 P.M., in consequence of the patient's breathing being difficult, the tourniquet was relaxed. The pulsation was almost imperceptible. At 7.55, pressure was altogether removed; pulsation ceased entirely in a few minutes, and the tumour felt quite solid. The patient was kept throughout under the influence of chloroform, which he bore very well; thirty-five drachms in all were used. Enemata of beef-tea and brandy were given frequently. After this, up to June 16th, there was sometimes slight pulsation, and the tumour felt harder and smaller than before the application of pressure. On June 16th, chloroform was given, and pressure was made over the common iliac artery by means of Lister's abdominal tourniquet, for five hours, during which it was relaxed twice. There was still occasional pulsation up to June 24th, when it ceased altogether, and had not recurred on July 10th, when the patient was discharged. Mr. Russell said the great object of the rapid pressure treatment was, that there should be a cure outright and at once. If the treatment had to be prolonged for an hour or a day, the portion of the clot which might have formed in the tumour might occasionally be carried out and do great mischief. As Newcastle was the birthplace of the rapid pressure treatment, he thought it only fair to say what was believed there. It was originated by Dr. William Murray, whose case was successful; two cases had been successfully treated by Dr. Heath, and the case he had reported was the fourth in Newcastle; but there were several other scattered cases. He thought that cure took place almost instantaneously, and that it was owing to the rapid coagulation of the blood in the sac. He recommended the plan of letting in fresh blood, which might coagulate more readily. There was another very important thing in the case, and that was that the man was under chloroform ten hours. In some cases of aneurism, the tumour had disappeared very rapidly.

ART. 224.—*Popliteal Aneurism; Failure of Flexion and Compression; Incision of the Sac, and Ligature of the Artery.*

Under the care of Mr. HENRY SMITH, at King's College Hospital.

(*The Lancet*, November 26.)

Instances of aneurism are now and then met with where, either from the position of the tumour, or from certain conditions occurring during

treatment, it is needful to have recourse to the old operation of laying open the sac and tying the vessel at the seat of the disease. It is well known that the late Mr. Syme a few years since adopted this plan with success in one or two remarkable cases of aneurism which did not well admit of other treatment. Mr. Heath also laid open a femoral artery some time since at University College Hospital, and tied both ends of the artery.

On the 12th inst. Mr. Henry Smith laid open a large aneurismal tumour and ligatured the open end of the artery in an interesting case, of which we briefly give the history:—The patient, who had been a soldier, and was only twenty-seven years old, was admitted into the hospital on Aug. 5th, with a swelling in the left popliteal space about the size of two fists. It had existed only a month before admission, and it pulsated so feebly that doubts had been entertained as to the nature of the tumour. On examination, however, it was found that the pulsation, although feeble, was distributed equally over the whole contour of the swelling, which was therefore concluded to be an aneurism; and Mr. Smith determined to try to cure the disease by the flexion method. The limb was carefully bandaged, and the leg bent well upon the thigh, and retained by suitable apparatus. At the end of two weeks the treatment appeared to be successful, the pulsation having ceased and the tumour become smaller. The limb was then allowed to remain in its natural position. Three days afterwards, however, a sudden change had taken place; pulsation had returned, the tumour had become enlarged to double its former size, and the tissues around had become infiltrated, so as to lead to the supposition that the aneurism had become diffused. The limb below kept warm and free from œdema, and the patient suffered no constitutional disturbance whatever. Mr. Smith then determined to apply pressure. Carte's tourniquet was first applied, but it was not borne well. Signorini's was next used, and pressure was maintained to the femoral by the alternate use of two pads. This instrument was borne well, and after a fortnight the pulsation was completely arrested. The pressure was, however, kept up until Oct. 15th, when suddenly a great enlargement of the tumour took place, accompanied by severe pain. On the appearance of these symptoms the tourniquet was removed, and evaporating lotions were applied. On Nov. 1st the dresser's report stated that the tumour was becoming smaller, and that pulsation had once more entirely ceased. On Nov. 3rd the tumour again increased in size, and on the 7th it was still larger and very painful, with very distinct fluctuation. The leg had become œdematous, and the tissues above and below the tumour much infiltrated. On the 10th Sir William Fergusson examined the case with Mr. Smith: and, as it was evidently needful that some action should be adopted, agreed with him in the view that the tumour should be freely laid open. Accordingly, on the 12th, Mr. Smith made an incision into the most prominent part of the tumour, which was as large as a man's head, and a quantity of semifluid and coagulated blood was discharged. The opening was then enlarged, the hand introduced, and large quantities of clots, fibrinous layers, and purulent fluid were rapidly removed. Arterial blood then immediately filled the lower portion of the large cavity, and it became at once apparent that the main

artery was still open. Its orifice, however, could not be seen until the opening was considerably enlarged. The upper end of the artery was then distinctly seen, behind and to the inner side of the femur. It was seized with a pair of dressing forceps, and after some little trouble a ligature was thrown around the vessel, as high up as possible. The operation was much facilitated, and was rapidly completed, thanks to the able assistance of Sir William Fergusson and Mr. Wood. Digital pressure was maintained on the artery at the groin, and the patient lost so little blood that he was comparatively but little exhausted. Before the wound was dressed, the large cavity was well syringed out with a strong solution of chloride of zinc.

In the course of his remarks on this case, Mr. Smith stated that flexion and compression having failed to effect a cure, although they both had at first appeared to promise success, and as without any assignable cause the aneurism had suddenly enlarged enormously, and shown signs of having burst and suppurated, the constitutional powers of the patient meanwhile beginning to fail, he had been led to decide on operating. In the absence of mortification in the lower limb, amputation had not been warranted, and the absence of pulsation in the tumour had not indicated any necessity for ligaturing the artery in the thigh, and as there was reason to suppose that suppuration was going on in the tumour, he had thought it best to lay it open. As they had seen, it then became evident that the main artery was not plugged, but only partially closed by clots. This had necessitated ligaturing the open vessel, which had appeared to be healthy. Had he not been able to tie the artery at the site of the aneurism, there would have remained the alternatives of ligation higher up in the thigh, and amputation.

On the 22nd inst. the ligature came away, and in every other respect the patient had progressed without an unfavourable symptom.

ART. 225.—*Successful Ligature of the Superficial Femoral Artery on Lister's Plan.**

By C. J. GIBB, M.D.

(*British Medical Journal*, September 24.)

R. T., aged thirty-five, was admitted into the Newcastle Infirmary on Dec. 17th, 1869, with popliteal aneurism of four months' duration. The limb was enveloped in cotton-wool and bandaged, placed on an inclined splint, and allowed to rest for a few days. Curtis's and Signorini's tourniquets were then continuously applied, alternated occasionally with a nineteen pounds' weight of lead. As this treatment caused great pain, and increased the swelling and redness of the leg, without benefiting the tumour, it was discontinued after two days' trial. Continuous digital pressure was then carried out for twenty-four hours, with the effect of destroying the pulsation of the tumour and of hardening it;

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-on-Tyne, August, 1870.

increasing the size of the leg, however, and making it very painful and inflamed. For two days the aneurism became a little harder and smaller, and lost pulsation; after which, this gradually regained pulsation, and appeared worse than on admission. A fortnight after admission, the superficial femoral artery was tied with carbolized catgut; the ends were cut off close, and the wound closed according to Lister's plan, the slight roll of bandage above the plaster being also kept saturated with carbolized oil. The tumour ceased to pulsate, solidified, became less, and progressed in the usual favourable way. On the eighth day, the wound was found to be united by the first intention, the superficial skin cut alone discharging a slight ichor for a fortnight afterwards. He was now able to leave his bed; when, on the fifth week after the operation, another patient with erysipelas being in the ward, he was seized with rigors, followed by phlegmonous erysipelas of the limb, ending in death seven weeks after the operation. The post-mortem examination was made by Dr. Philipson, who found all the viscera perfectly healthy; there was no pyæmic deposit in any part, and the external iliac artery and vein were open and healthy. The soft parts in the thigh were carefully dissected by Dr. Black. A large knot of hardened lymph surrounded the wound and the adjacent ligatured part of the artery; no trace of the catgut ligature could be found, although the artery at that part remained with its coats perfect, and narrow, and compressed. The usual clots in the artery above and below, and in the aneurism, were also present.

ART. 226.—*On Inguinal Phlebitis consecutive to Compression of the Femoral Artery in the Fold of the Groin.*

By M. HENRI PETIT, Externe of the Hôpital Lariboisière.

(*Gazette Hebdomadaire*, No. 28, 1870.)

"In a communication made in 1861 to the *Société de Chirurgie*, M. Verneuil directed attention to the phlebitis which may follow compression applied to arteries seated near veins. He cited three cases, in which he had had opportunities of observing this accident.

"A young woman, who had been subjected during amputation of her thigh to a brief compression of the femoral artery, was afterwards attacked with circumscribed phlebitis. The development of a swelling over several parts of the femoral vein permitted of no doubt as to the nature of the affection; nevertheless no special phenomena were manifested; there was no œdema, resolution gradually took place, and recovery was established without delay.

"In a male, whose leg had been amputated below the knee, similar symptoms occurred; compression at the fold of the groin had been kept up for about twenty minutes. Two days after the operation pains came on at the root of the lower limb, and, at the same time, slight swelling and a longitudinal induration in the form of a large cord to the inner side of the artery, and along the course of the femoral vein. Resolution commenced after the application of leeches and fomentations. The

patient finally succumbed to purulent infection. Unfortunately an autopsy was not made.

"A third patient was treated for an enormous popliteal aneurism by digital compression which was of long duration. The integument over the compressed artery became painful, and considerable œdema of the whole limb was manifested; the toes subsequently became cold, and gangrene attacked the distal portion of the foot, and was finally arrested at the tibio-tarsal articulation. Attention was not directed to the inguinal region during the life of the patient; but at the autopsy old clots were found in the femoral vein."

M. Verneuil concluded from these facts that arterial compression requires certain precautions, and that it is necessary to compress the vessel less powerfully and for as short a period as possible.

A little later M. Verneuil returned to this subject* and insisted afresh upon the conclusions he had previously formulated. "Many cases of this kind," he stated, "collected in a few years prove that this lesion is not very rare."

Since his last communication on this subject, M. Verneuil has not lost sight of these interesting facts. In the month of November, 1869, the following case occurred in his practice:—

Amputation at the thigh was performed on a robust man, aged forty-six years, for a large ulcer of the leg which had undergone epithelial degeneration. Compression of the femoral artery in the groin was kept up for about a quarter of an hour. On the fifth day œdema of the stump was noticed, and there was also pain on pressure along the course of the femoral vein, having its maximum of intensity at the fold of the groin. There was also recrudescence of fever and general malaise. This condition of things lasted for several days, then the symptoms diminished in intensity, and the patient became convalescent and finally recovered.

M. Petit reports two very remarkable cases of inguinal phlebitis which occurred in the practice of M. Verneuil.

"A man, aged thirty-three years, had considerable hæmorrhage on the nineteenth day after his admission into the Lariboisière from a bad compound fracture of the leg. This was arrested until the arrival of M. Verneuil, by a tourniquet applied at the groin and retained there for three hours. The leg was then amputated. Five days after the operation the stump became painful, and there was subsequently profuse hæmorrhage, which necessitated deligation of the femoral artery. On the tenth day the patient had some febrile disturbances which were afterwards associated with sweating, pain in the chest, rigors, impeded respiration, and pain in the stump. The patient died on the nineteenth day.

"At the autopsy metastatic abscesses were found in the lungs. During the dissection of the stump M. Verneuil found that there was something abnormal at the neighbourhood of the femoral vessels. The cellular tissue was very hard and like fibrous structure. Having opened the femoral vein he found this vessel filled with a purulent fluid; higher up the iliac vein and, below, the rest of the femoral vein, was

* *Dictionnaire Encyclopédique des Sciences Médicales*, t. ii. p. 254.

filled by recent clots. This then was a remarkable instance of inguinal phlebitis, the precise characters and starting point of which it was necessary to investigate. At the level of the fold of the groin the cellulo-fatty tissue which surrounded the femoral vessels was of a greyish colour, slightly congested, very dense, hard like fibrous tissue, and grated under the scalpel. It was very adherent to the vessels. The sheath of the vessels could not be found in the midst of this tissue, so closely was it adherent both to it and to the femoral artery and vein. Over the antero-interior surface of the vein was a gland of the size of an almond, evidently hypertrophied and very hard. Below this body the anterior and internal surfaces of the vein had been separated from the surrounding tissue along an extent of about $3\frac{1}{2}$ centimetres by a kind of focus which contained a small quantity of fluid, which had all the appearance of phlegmonous pus.

On continuing the dissection above in the external iliac vein and below in the femoral veins, the internal saphenous vein, the deep femoral vessels and those of the triceps, it was observed that the cellular tissue gradually regained its normal characters in parts more and more removed from the fold of the groin. Towards the extremity of the stump, however, the firmness of the cicatricial tissue and the adhesions between the femoral vessels were very great over an extent of about four centimetres. The external appearance of the vein varied also at different points. Its calibre, which was considerable at the fold of the groin, diminished rapidly from above downwards on its anterior surface, the wall of the vessel was of a greyish colour near the enlarged gland, and of a deep red colour lower down. The femoral vein having been opened it was found to contain at the groin a yellowish fluid presenting all the appearance of pus. This fluid was enclosed in a layer of more solid tissue of the same yellowish colour, which was but slightly adherent to the smooth inner wall of the vessel. Below the puriform fluid was a clot, yellow at first and then dark red and black, extending within the walls of the vein to the extremity of the stump.

The second case, one of a man, aged twenty-five years, whose thigh was amputated by M. Verneuil on account of suppurative arthritis of the knee. The femoral artery was compressed in the groin for twenty minutes. On the third day after the operation pain came on in the groin and swelling of the glands of that region. These symptoms were followed by rigors, œdema of the stump, foetid suppuration from the wound, and cough, with difficulty of breathing. The patient died on the eleventh day.

At the post-mortem examination the peri-vascular tissue in the groin was found to be dense, hard, and adherent to the vessels. The external surface of the artery presented a very marked reddish injection. These characters gradually disappeared as one departed from the seat of the arterial compression. On opening the femoral vein the wall of the vessel was found to be hard and hypertrophied. The whole cavity of the vein was filled by clots of different ages. At the lower part this mass of clot was softened into a thick puriform fluid. The inferior portion of the external iliac vein was likewise filled by clots.

M. Petit makes the following reflexions upon these cases:—

“A complete resemblance exists between these two cases with regard

to their anatomy and pathology, with the exceptions of the difference in duration; in the first patient death occurred on the twenty-fourth day, in the second, much earlier—on the eleventh day.”

In both cases there was inguinal periphlebitis and thrombosis of the femoro-iliac vein.

The thrombosis could be divided into three distinct zones, an inferior and a superior zone, each having almost the same age, and a third zone in the middle of much more recent formation.

How are these three parts formed? Can it be admitted that the thrombosis commenced at the extremity of the stump and then ascended towards the root of the limb, that is to say, that the inguinal phlebitis was but the continuation of the normal phlebitis of the wound? Certainly not, for had this been so, the clot of recent formation would not have been placed between the upper and lower zones, the older clot would have formed the inferior zone, and the more recent clot the upper zone. The only possible interpretation is the following:—The inferior zone is constituted by the normal clot of the wound; the superior or inguinal zone, the formation of which is quite independent of the lower one, has for its cause inguinal periphlebitis, due to compression. The intermediate zone is due to the propagation of thrombosis between the superior and inferior zones.

“That compression exercised for a long time upon the femoral artery at the fold of the groin may be a determining cause of inguinal periphlebitis, and thrombosis is therefore demonstrated at the present day. But ought one to stop at this consideration? May not thrombosis of the femoral vein be itself the source of other accidents? In the first case were observed consecutive hæmorrhages, and, in both cases, signs of purulent infection during life; at the autopsy, metastatic abscesses were found in the lungs. Would not the phlebitis of the femoral vein play a part in the production of these phenomena? We will examine this point.

“Normal anatomy teaches us that the external iliac vein is deprived of valves and also the common iliac vein and the vena cava inferior which are directly continuous with the former.

“When thrombosis takes place in the upper part of the femoral vein, that is to say near the point where this vessel arbitrarily takes the name of external iliac, there is nothing to arrest the progress of this thrombus from below upwards. It will gradually extend to the external iliac vein, the common iliac vein, and from thence over a variable extent of the inferior vena cava. There will then be a moment in which the following conditions are found realized: A thrombus occupies the cavity of the vein at the level of the fold of the groin, and extends upwards; its free upper extremity is detached either by the force of the venous circulation, or in consequence of movements of the amputated limb, produced by the patient himself through restlessness or during a dressing. In this manner an embolus is formed. The absence of valves and also the increasing calibre of the vessel from below upwards, favours the progress of the migrating clot, which is carried directly to the right side of the heart, and thence propelled into the pulmonary artery. There it may produce variable results.

“‘If it be altogether formed of coagulated blood, the symptoms are not very severe. One has observed large branches of the pulmonary artery obliterated by an embolus; entire lobes may thus be rendered impervious to blood. The results, however, are limited to these functional disturbances and to a local inflammation produced by the presence of the migratory clot.’ (Hirtz and Strauss, *Nouveau Dictionnaire de Médecine et de Chirurgie Pratiques*, t. vii, p. 627.)

“But if the thrombus has already undergone a purulent change, the embolus is then a septic substance, and under these conditions embolism constitutes a condition of the greatest gravity. It gives rise to the formation of infarctions and of metastatic abscesses; it determines general symptoms, a typhoid condition, repeated rigors, an intense fever and diffused inflammations of the serous and mucous membranes; in short, that complex state designated in clinical surgery by the name of *purulent infection*.

“These facts which we have reported seem to accord thoroughly with these anatomical and clinical data. In the first place the superior limit of the inguinal clot was distinctly marked a short distance from the fold of the groin, and at this point the softening of the thrombus was complete in the first case, and though less advanced in the second, still to a sufficient extent to render easy the formation of emboli.

“Then, in the first case, the most intense shivering was observed immediately after the dressing; it is permitted one to believe that the movements of the stump necessitated by the dressing had caused the departure from the softened and purulent clot of successive emboli, the arrival of which in the lung had been indicated by rigors. In the second case, the mechanism of the embolus was probably different; in fact, the internal saphenous vein had remained completely permeable, the blood proceeding from this vessel would have constantly agitated the thrombosis of the inguinal vein, and forced away portions of this clot as soon as they had become detached. In this way we may account for the irregular occurrence of the rigors.

“The participation of thrombosis in the production of consecutive hæmorrhage seems at first sight to be less evident.

“When in a healthy individual a vessel has been obliterated, it is known that a more active circulation takes place in the neighbouring vessels, so that the blood which cannot pass through the obliterated vessel finds sufficient issue at another part. This takes place most frequently without any bad symptoms; but the conditions are changed when one has to do with an individual in a state of disease.

“On a subject who has undergone amputation at the thigh, for example, thrombosis of the femoral vein takes place, and the retrograde circulation, deprived of its principal channel, is then much obstructed. This obstruction increases in proportion as the thrombosis, aided in its growth by the debility of the patient, and in consequence of the neighbourhood of a large suppurating wound, acts progressively upon the adjoining veins. We have then afflux of blood to the stump, and congestion, accompanied in some cases by a pulsating sensation, and generally by pain. This passive congestion determines increased pressure from within outwards upon the walls of the capillaries and small vessels, a certain number of which, cut through at the time of the

amputation, are closed merely by clot. Consecutive hæmorrhage, it must be remembered, occurs in most instances on the eighth or tenth day after the operation. At this period the clot is still far from solid, independently of those cases in which some morbid change in the blood retards its formation; and also those where, the vascular wall contracting at the first dressing, the clot does not suffice to close the vessel as soon as the contraction has ceased. One can conceive, then, how slight pressure exerted from within outwards upon the clot may drive it from the cavity of the vessel. Hence we have consecutive hæmorrhage taking place, as numerous observations have demonstrated, from small unnamed vascular branches, which at the time of the operation did not require the ligature.

"In considering the preceding remarks, we hold that the following conclusion may be laid down:—

"Compression applied to the femoral artery at the fold of the groin, in amputations of the lower limb, may set up inguinal periphlebitis.

"Acting alone, or in concert with periphlebitis, this compression will cause thrombosis of the femoral vein, which will extend consecutively to the veins above and below.

"At a given moment, then, and under the influence of various causes, fragments may be detached from the proximal vicinity of the clot; and form infarction and metastatic abscesses in the lungs. It is impossible to find any other starting-point for these lesions; in fact, they are exclusively limited to the pulmonary apparatus. They have a unique cause—viz., a morbid change seated at some part of the venous system—thrombosis of the inguinal vein.

"The obstacle opposed to the retrograde circulation by obliteration of the principal venous trunk of the limb may be the cause of secondary hæmorrhage.

"The appearance of these phenomena after an amputation is almost invariably followed by the death of the patient.

"As to the degree of frequency of these symptoms considered in all their forms, from the most simple periphlebitis to the most complex periphlebitis, thrombosis, embolism, secondary hæmorrhage, we can as yet make no precise statement. For this purpose fresh observations are necessary.

"It would be especially interesting to find out the results of compression applied during amputation of the leg.

"In one of the cases communicated by M. Verneuil to the Société de Chirurgie, a patient, after amputation of the leg, presented rigors of inguinal phlebitis, and died from purulent infection. The accidents described as sequelæ of amputation of the thigh may come on then after that of the leg. We need not, however, in this latter instance, exaggerate the gravity of the inguinal phlebitis, for amputations of the leg, at its inferior part particularly, give many recoveries. And it may be thus explained. Here, in fact, there is a considerable distance between the seat of the operation and that of the inguinal phlebitis. These two lesions may follow their evolution separately, and leave some liberty to the collateral circulation; this deposition then diminishes the gravity of the thrombosis, and consequently of the prognosis. In the thigh, on the other hand, there is close proximity between the two parts,

whence the ready septicity of the inguinal clot, &c. In this way might be explained the quite exceptional gravity of amputation of the thigh.

"In preparing this communication we had the three following aims :—

"1st. To establish a hitherto unrecognised pathological lesion.

"2ndly. To direct attention to the grave nature of this lesion with regard to the prognosis.

"3rdly. To raise a question of operative treatment.

"The two first objects have been fulfilled; we will now make a few remarks upon the question of treatment.

"We have seen above that in his first communication on inguinal phlebitis, M. Verneuil was led to conclude that it was necessary to compress an artery with as little force and for as short a time as possible. If it be demonstrated that *compression*, whether mechanical or digital, *frequently* determines the accidents which we have described, then it will be a matter of urgency for us to produce preliminary hemostasis in some other way. It is to these points that we wish to draw the attention of enlightened surgeons, and those who may be in a favourable situation for undertaking this kind of research.

"For his part, M. Verneuil has decided for the future to amputate the thigh as if he were extirpating a tumour. The operation is thus performed: to seek at once for the femoral artery and tie the vessel; then to divide the soft parts, tying the small vessels as they are opened; finally, the bone is sawn through. M. Maisonneuve has already adopted this proceeding, and has performed amputation of the thigh without the loss of much blood."

ART. 227.—*On the Subcutaneous Division of the Neck of the Thigh-bone, as compared with other Operations for rectifying Extreme Distortions at the Hip-joint with Bony Anchylosis.**

By WILLIAM ADAMS, F.R.C.S.

(*The Lancet*, August 13.)

After some general observations on true and false, or bony and ligamentous anchylosis, and the relative frequency and rapidity with which these conditions are produced after various forms of disease, the author referred to those cases of bony anchylosis of the hip-joint which called for surgical interference, in consequence of the anchylosis having been allowed to take place with the limb in a deformed position; the inconveniences arising from bony anchylosis of the hip-joint depending upon the extent and direction to which the limb may be contracted, and drawn into a deformed position. In females, when the thigh is flexed and adducted so that the knee is drawn across the opposite thigh, the orifice of the vagina is often seriously interfered with, and urination is

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-upon-Tyne, August.

performed with difficulty, and even a catheter cannot be passed, as occurred in the case recorded by Dr. Sayre; the parts, moreover, are kept in a constant state of excoriation. The author then referred to the various operations which have been proposed and adopted for bony ankylosis of the hip-joint with deformity, such as Rhea Barton's operation, and also that proposed by Louis Sayre, of New York, which he had performed in two cases. In all these operations it was necessary to make a large external incision, so as to admit of the use either of an ordinary saw or of the chain-saw; and although in three cases recorded the result has been successful, so far as rectification of the deformity was concerned, the possibility of the restoration of motion by the formation of a false joint was not clearly established. The author, therefore, advised that the object should be limited to the rectification of the deformity, and obtaining bony ankylosis with the limb in a straight position. This he proposed to accomplish by a subcutaneous division of the neck of the thigh-bone within the capsular ligament, using only a tenotomy knife, and a very small saw three-eighths of an inch in width, with one inch and a half cutting edge, at the end of a small shank, three inches in length. A case in which he had successfully performed this operation was brought before the meeting, and no inflammation whatever had followed the operation; and the author, therefore, felt justified in comparing this operation of the subcutaneous division of bone—or subcutaneous osteotomy—with the subcutaneous division of tendons. The case in which Mr. Adams performed the operation was one for bony ankylosis of the right hip-joint, with the thigh flexed and contracted to a right angle with the pelvis, so that the limb was utterly useless. Bony ankylosis with the limb in a straight position had been obtained as the result of the operation, and the man is now enabled to walk without the assistance of either a crutch or stick; and the bony consolidation at the seat of operation in the neck of the thigh-bone is such as to enable him to bear the whole weight of the body on the limb which had been operated upon.

ART. 228.—*Excision of the Hip-joint—Clinical Remarks.*

Under the care of Mr. Wood, F.R.C.S., Surgeon to King's College Hospital.

(*The Lancet*, August 13.)

The patient was an emaciated child, six years of age, with long-standing hip disease and pelvic abscess. In the groin was a fistulous opening, which admitted a probe down to the internal surface of the ilium. Corresponding to the acetabulum, in the anterior aspect of the upper third of the thigh, were three or four fistulous openings of superficial burrowing abscesses; while posteriorly the skin had sloughed away, so as to leave a ragged quadrilateral opening, through which projected the trochanter, covered by its muscles. The limb itself was straight, not inverted, and only slightly shortened; and Mr. Wood said that he had hoped at first that good diet and nursing would save the

child from an operation, but that interference had now become necessary to save life. He added that disease of the hip is one which, in most instances, has a tendency to cure itself, and that when an operation is resorted to, it is generally to remedy distortion, and to hasten the natural process of healing; but in this case there was little distortion to rectify, and the operation was required to give the child a chance of life by removing diseased structures, and affording a free exit for discharges. Having removed a considerable quantity of diseased bone, Mr. Wood said that he had found a perforation of the acetabulum communicating with the pelvic abscess, and caries of the head, neck, and part of the shaft of the bone. In the latter situation he had removed the diseased tissue by gouging down the shaft to the extent of about an inch, leaving a thin shell covered by the periosteum. It was his habit also to remove the trochanter in these cases, even if proved to be healthy; for both Sir W. Fergusson and himself had found that the resulting limb was none the better for a literal adherence to the principles of conservative surgery in this respect; while, on the other hand, if the trochanter were left, the operator had to work round and beneath it, making a much larger wound, at the mouth of which he left an effective obstruction to the free discharge of matter and spicula of bone. But he was most careful at this point, and at every other which he touched in the operation, to save the perichondrium and periosteum; especially he preserved the perichondrium of the trochanter and the attachments of its muscles, leaving a well-defined cartilaginous arch, from beneath which he removed the diseased bone. Mr. Wood explained that this operation was known and practised elsewhere; but that the part which he claimed was the removal piecemeal, instead of *en masse*, of the diseased bone, and that by this proceeding he saved the largest possible surface of bone-producing tissue; also that the external wound, the internal damage to soft parts, and hæmorrhage were reduced, and that the recovery was more rapid. The general result of the operation, as a whole, was said to be the formation of a smooth, rounded head on the upper extremity of the femur, which does not become ankylosed with, but moves freely in, the acetabulum. Mr. Wood also drew attention to his having commenced the operation by making a T-shaped incision, the tail portion of which he always endeavours to bring over the spot where he would be likely to use the saw, which he could then freely handle without further injury to the skin; while after the operation there remained a depending furrow, which facilitated the evacuation of discharges.

ART. 229.—*Caries of Condyle of Femur—Suppuration of Knee-joint—Amputation above the Condyles of the Femur, with Teale's Flaps—Recovery.*

Under the care of Mr. HULKE.

(*Medical Times and Gazette*, December 3.)

A cabman, aged sixty-seven, was admitted, under Mr. Hulke's care, into the Middlesex Hospital on July 12, 1870, with disease of the right

knee of fifteen months' duration. He described the pain as being at first like that of gout, to which he had been subject for some years. The disease increased rapidly, and at the time of his admission there was very great swelling of the knee, with enlargement of the cutaneous veins and discharging sinuses in the posterior and outer surfaces. After remaining a short while under observation, the pain continuing to increase rather than to diminish, on July 20 Mr. Hulke amputated just above the knee, fashioning Teale's flaps, and washing the flaps with carbolic acid lotion. The disease was found to consist of extensive pulpy degeneration of the synovial membrane, with eroded cartilages and a carious pit in the outer condyle. The stump healed very slowly, a sequestrum requiring removal on November 9, and recovery being further retarded by a large bed sore; but the man is now almost well again.

ART. 230.—*Supra-Condylloid Fracture of Femur with Protrusion of Bone and Effusion of Blood and Air into Knee-joint—Recovery, with Perfect Movement of the Articulation.**

By M. LE FORT.

(*Gazette Hebdomadaire*, No. 31, 1870.)

A young man, aged eighteen years, was taken to the Hôpital Cochin in October, 1869, with the following injury:—The thigh presented on its anterior surface an irregular wound about six centimetres in extent. This wound was due to the protrusion of the superior fragment of the femur, which had been fractured above the condyles. The protruded portion, however, had been reduced by the movement of the injured limb. The knee-joint was filled with blood and air, which could be forced out through the wound. The two condyles were movable, the one upon the other, and upon the shaft of the femur.

The limb was placed upon an inclined plane and kept at rest. The wound was covered by compresses dipped in diluted alcohol. On November 24 an immovable apparatus was applied. On December 29, this was removed, but as consolidation was not perfect, a silicated bandage was applied. In March, 1870, consolidation was complete. The patient could walk without any kind of help, and was able to flex and extend fully the leg upon the thigh.

ART. 231.—*Acute Inflammation of Knee-joint—Amputation, with Teale's Flaps, above the Femoral Condyles—Recovery.*

Under the care of Mr. SHAW and Mr. HULKE.

(*Medical Times and Gazette*, December 3.)

A shepherd, from Surrey, aged fifty-three, was admitted into the Middlesex Hospital under Mr. Shaw's care, February 9, 1869, with acute

* Communicated to the Société Impériale de Chirurgie.

inflammation of the left knee-joint, of two weeks' duration, which he attributed to sleeping in the wet grass when heated with exercise. The joint was very swollen, tender, and extremely painful. The thigh and leg were also much swollen. His rest was broken by starting of the limb at night. He grew worse, and on March 10 his pulse was weaker, his tongue dry and brown, and the pain in the joint excessive. Mr. Hulke therefore amputated the limb just above the condyles of the femur, making Teale's flaps, and removing afterwards the patella. The wound was swabbed with a solution of carbolic acid, and dressed with lint dipped in the same. One ounce of brandy every hour, and as much strong beef-tea as he could be persuaded to take, and opium freely, were given. He rallied slowly. A small piece of the inner corner of the front flap sloughed, but sufficient remained to make a good covering for the bone, and he was discharged in June with a sound and useful stump.

ART. 232.—*Periostitis and Caries of Tibia—Suppuration of Knee-joint—Amputation above the Condyles of the Femur, with Teale's Flaps—Recovery.*

Under the care of Mr. SHAW and Mr. HULKE.

(*Medical Times and Gazette*, December 3.)

An Irish bricklayer's labourer, aged sixty, was admitted into the Middlesex Hospital, January 12, 1869, under Mr. Shaw's care. The right knee-joint was swollen and red. The redness and swelling extended into the neighbouring part of the thigh and leg; copious purulent discharge ran from sinuses over the caput tibiæ, leading to carious bone. Any movement caused severe pain, and his sleep was broken by starting of the limb. During the following month the state of the joint became more hopeless, his appetite fell off, and his strength declined so much that it was evident that amputation afforded the only chance of recovery. Mr. Hulke therefore (February 14) amputated the limb, dividing the femur just above its condyloid expansion, adopting Teale's method, and cutting out the patella from the square front flap. He rallied well, but the complete cicatrization of the stump was retarded by a limited necrosis of the cut surface of the femur. On April 5 he was able to get up, and the 11th to go out into the garden. Some weeks later a small sequestrum was removed, and he was discharged from the Hospital in July, with a sound stump, and relatively robust.

ART. 233.—*On Supra-Condylloid Amputation of the Thigh.*

By WM. STOKES, Jun., M.D., Dublin, Surgeon to the Richmond Surgical Hospital.

(*The Lancet*, June 18.)

At a meeting of the Royal Medical and Chirurgical Society, on May 24th, Dr. Stokes read a paper on the above subject. He commenced

by referring to the importance of the operating surgeon determining whether the amputation at the knee-joint or of the thigh is the least hazardous to the patient, and also which of these operations affords the best stump for the subsequent adaptation of an artificial limb. After alluding to the opinions of Hoin, Velpeau, Syme, Malgaigne, and others, as to amputation at the knee being less hazardous to the patient than amputation at the thigh, he went on to describe a method of amputating at the knee, which was based on Gritti's modification of Carden's amputation at the knee. After discussing the objections which have been urged against amputations at the knee by surgical mechanists and the way of obviating them, the author proceeded to point out the differences between the procedure which he proposed to term the "Supra-condyloid amputation of the thigh" and the Italian modification of Carden's amputation. These differences are:—1st. That the femoral section is made, in all cases, fully half an inch above the antero-superior edge of the condyloid articular cartilage. 2nd. That in all cases the cartilaginous surface of the patella must be removed. 3rd. That the flap should be oval, not rectangular. 4th. That there should be a posterior flap fully one-third of the length of the anterior flap.

Having given the particulars of the cases in which he had performed this operation, and discussed its details, the author proceeded to indicate what he believed to be the advantages of the supra-condyloid amputation over the amputations through the knee—viz., those of Velpeau, Blenkins, Lane, and Markoe; the amputations through the condyles; and lastly, the higher amputations of the thigh, in which the medullary canal is necessarily involved. These advantages, many of which are in common with the amputations through and near the knee, may be enumerated as follows:—1. The stump being more useful for progression. 2. Possibility of making pressure on the face of the stump. 3. The patient not being obliged to walk as if he had ankylosis of the hip-joint. 4. The operation being less hazardous than amputation of the thigh, from being further removed from the trunk. 5. The shock is less than after the higher amputations of the thigh. 6. The muscular interspaces unopened. 7. Less chance of protracted suppuration from the anterior flap consisting for the most part of skin and fasciæ. 8. Less chance of purulent absorption, from the posterior surface of the anterior flap being covered with synovial membrane. 9. Probable advantages derived from having the cut surface of the femur covered by the patella. 10. Advantages derived from preserving the attachments of the extensors of the thigh. 11. Impossibility of a conical stump resulting. 12. No liability to the formation of tubular sequestra. 13. Less chance of phlebitis, from the vessels being all divided at right angles to their continuity—not obliquely, as in all other flap amputations, which necessitates the wounds in the vessels being so much greater in extent.

The author concluded by claiming for the amputation of the thigh which he proposed to call the supra-condyloid amputation of the thigh, the advantages of both the circular and flap amputations, and the defects of neither.

ART. 234.—*Dislocation of Hip into the Thyroid Foramen—Reduction with Aid of Pulleys, after Failure by Manipulation.*

Under the care of Mr. DE MORGAN, at the Middlesex Hospital.

(*Medical Times and Gazette*, October 1.)

Patrick H., a labourer, aged thirty-five, and a strong, robust man, had been drinking rather freely on Sunday, 10th July, 1870, but was not at all drunk. He began jumping in a field, and had twice cleared a hedge with a ditch beyond, when, on taking it the third time, he alighted with his left foot in the ditch, and his right upon the bank in front. His thighs were thus widely separated, and he immediately felt a sudden "start" in the right hip-joint, and fell forward. He attempted to rise, but could not do so, and was lifted into a cab, and brought directly to the Hospital. He had never injured himself before, and had only once been laid up—seven or eight years previously—with rheumatic fever.

On examination, after getting him to bed, it was found that the right leg was markedly everted, and that adduction was impossible; that a distinct hollow existed on the outer side of the right hip, in the situation of the trochanter major; that beneath the attachment of the adductor muscles to the pelvis a hard prominence could be felt, and that the muscles themselves were much stretched. The right leg was lying widely separated from the left, and from the median line, and could not be brought nearer without the attempt causing great pain. From the position of the right limb it does not seem to have been evident to superficial observation which limb was the longer, but a measurement taken from the anterior superior iliac spine to the extended condyle of the femur on each side showed the right to be two inches shorter than the left. (This measurement, however, must have been affected by the adducted position of the limb.)

Mr. De Morgan first tried to reduce the dislocation by manipulation, flexing the knee thoroughly, and then bringing the thigh across the abdomen with a rotary movement; and this failing, whilst the man was fully kept under chloroform, the pulleys were applied, and after much trouble the head of the bone shifted to the dorsum ilii, and finally returned to the acetabulum. The limb was afterwards kept absolutely at rest, and the man went out well in a few weeks.

ART. 235.—*On a Case of Dislocation of the Hip-joint Downwards and Inwards, reduced by Manipulation.*

By JOSEPH LISTER, F.R.S., Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Medical Journal*, August.)

There is no more striking improvement in practical surgery of late years than the manipulative treatment of dislocations of the hip-joint;

the simplicity and facility of the new method presenting a remarkable contrast with the old cumbrous and laborious practice. This has been well illustrated lately by a case under Prof. Lister's care in the infirmary:—

A man, twenty years of age, was at work in a shale-mine on the 11th of July, attempting to fix a wooden support for the roof, when the prop slipped, and a great mass of the shaly strata fell upon his back, forcing him to the ground upon his knees, which were driven violently apart. When Mr. Lister saw him at noon on the 12th, the thigh was fixed in the abducted and semiflexed position, with a marked appearance of elongation, and the head of the bone was to be felt with the utmost distinctness beside the perinæum, having been displaced to the inner side of the foramen ovale, so as to rest upon the ramus of the ischium. Twenty-four hours had elapsed since the accident; and the patient being one of the most muscular men Mr. Lister ever saw, there would formerly have been no hope of effecting reduction without resorting to the pulleys. Chloroform having been given, Mr. Lister flexed the knee and thigh completely, rotated freely outwards and then slightly inwards, and on extending the limb, found its position normal. All was done within a few seconds, and without the slightest violence.

ART. 236.—*Case of Spontaneous Fracture of the Femur.*

By ARTHUR DURHAM, F.R.C.S., Assistant-Surgeon, Guy's Hospital.

(*The Lancet*, December 3.)

At a meeting of the Clinical Society of London on Nov. 25th, Mr. Durham related a remarkable case of spontaneous fracture of the femur. When first seen by him in March, 1867, the patient, a professional man, aged forty-four, was seated, half-dressed, in an easy-chair. He thought himself capable of walking about, and was surprised to find this impossible. The right femur was found broken at the junction of the upper and middle thirds, the limb being shortened by three inches. Three months previously the patient had fallen downstairs and hurt his thigh; but he soon felt nothing of the injury, which he thought a trifling one. Seven weeks later, however, he began to have aching pain in the thigh, which was considered and treated as neuralgic; and when this had lasted three weeks, he felt, on going to bed one night, a sudden increase in the pain, and fell on to his bed in great agony. Next morning he could not move the thigh, which was much swollen. He was quite unconscious of having subjected the limb to any sudden strain. After a few days the swelling and pain diminished, and he got up, but could not walk about; and it was about ten days after that Mr. Durham, visiting him for the first time, in consultation, found his thigh broken. Under treatment the bone united; in the course of four months the patient could move about; two months later he returned to professional work. He remains quite well. Mr. Durham thought it probable that at the time of the fall some injury of the bone had taken place, which

had been followed by gradual interstitial degeneration and absorption of bony tissue, instead of healthy repair, leading to spontaneous fracture of the bone. The patient had, it seemed, been subjected to great worry and wear and tear of brain, and Mr. Durham suggested, as a topic for discussion, the relation which may exist between overwork or excitement of brain and defective nutrition of bone.

ART. 237.—*A Case of Syphilitic Gummatous Tumour occurring Fifty-five Years after the Commencement of the Infection.**

By M. ALFRED FOURNIER.

(*Gazette Hebdomadaire*, No. 35, 1870.)

In April, 1869, M. Fournier was consulted by a man, aged seventy-two years, on account of a supposed cancerous tumour of the thigh. The patient, who was robust and alert, stated that he had never been laid up except about three years previously, when he suffered from caries of the jaw. The tumour in the thigh had been noticed for a few weeks.

This growth occupied the middle portion of the latero-external region of the thigh; in a short time it had attained considerable size; it measured fourteen centimetres vertically, and from eight to ten centimetres in the transverse diameter. Its surface was irregular and nodulated; the skin was sound, except at one point, where there was commencing ulceration. No pain on pressure, but the movements of the limb and locomotion were impeded. The tumour was constituted by a solid mass, and presented no fluctuating point. It was adherent at its deep surface to the femoral aponeurosis, and immovable, although the skin glided easily over its surface, with the exception of one part, which was undergoing ulceration. The inguinal glands were normal. The patient was healthy in all other respects.

As the general state of health removed all ideas as to cancer, M. Fournier diagnosed the growth as a syphilitic gummatous tumour. The patient had previously had syphilis, and the preceding maxillary caries had been regarded by MM. Nélaton, Ricord, and Demarquay, as syphilitic in its nature. In consequence of this, M. Fournier prescribed iodide of potassium in large doses (from three to five grammes daily, progressively). This incomparable remedy did here what it almost invariably does in such cases: in eight days the tumour diminished considerably in size, and reabsorption proceeded so rapidly, that in six weeks there was no longer any vestige of the tumour. This result confirmed the syphilitic nature of the local affection.

But what was the history of the syphilis? At the age of seventeen, this patient had had a chancre on the penis, followed, in the course of a few months, by tubercles on the skin and ulceration of the mouth. According to the opinion of the medical men then consulted he was suffer-

* Communicated to the Société Médicale des Hôpitaux.

ing from syphilis. He underwent treatment for several months, and took pills which probably were mercurial. Then, thinking that he was cured, he discontinued his treatment. From this period up to the sixty-ninth year of his age no fresh symptom appeared which could be attributed to syphilis, and no fresh venereal attack was contracted. At the age of sixty-nine the patient suffered from maxillary caries, which yielded to iodide of potassium. Finally, three years later, when the patient was seventy-two years of age, there appeared in the thigh the above-described tumour, the nature of which was undoubtedly syphilitic.

To resume. 1st, a chancre at the age of seventeen, followed after some months by secondary symptoms; 2nd, syphilitic maxillary caries at the age of sixty-nine years; 3rd, a gummatous tumour at the age of seventy-two years. That is to say, that syphilis contracted at the age of seventeen, had remained dormant in the organism during fifty-two years, and had finally renewed its activity in presenting two important affections—viz., osseous caries, and an enormous gummatous tumour.

After having reported this fact, M. Fournier demonstrates by profound discussion that his interpretation of the facts is the only possible one. "In fact," says M. Fournier, "the patient either deceived me in the recital of his antecedents, or he deceived himself. That he knowingly deceived me is inadmissible, for several reasons. That he deceived himself is possible; and then the error related to a new and recent syphilitic infection which had passed unperceived. Had this been the case, the caries and the gummatous tumour would simply have to be attributed to this latter infection, rather than to the first one contracted fifty-five years ago. But here it becomes necessary to call much hypothesis to one's assistance. The man in question is intelligent, careful, attentive to the state of his health, and one unlikely to have contracted, without perceiving it, a second attack of syphilis; and, as an unanswerable objection, he would not have allowed to pass by without notice the secondary symptoms of this fresh attack of syphilis."

On the other hand, it has been made out by a number of observations, that syphilis may return twenty or thirty years after its first manifestation, and show itself by unequivocal symptoms. M. Fournier has seen a tibial exostosis which came on thirty-six years after contagion. Facts have been cited where forty years have intervened between the secondary and the tertiary affections. This longevity of syphilis, surprising though it be, is still admitted. If then, one must admit that the syphilitic infection may rest latent in the organism during twenty, thirty, or forty years, one surely cannot refuse to accept a longevity of fifty-two or fifty-five years, of which the preceding case offers an example. There is here a graduated scale, each degree of which leads insensibly to its summit. The point at which it is arrested can only be established by ulterior observations.

ART. 238.—*Myxomatous Tumour in the Calf—Operation—Recovery.*

Under the care of Mr. CHRISTOPHER HEATH, at University College Hospital.

(*Medical Times and Gazette*, August 27.)

Eliza C., a widow, aged fifty-five, in domestic service, was admitted into University College Hospital, under Mr. Heath's care, on April 12, 1870. She had been a strong healthy woman, had never suffered from symptoms of syphilis, had reared two children, and had spent many years in service. It was to the amount of kneeling required in her work that she herself attributed the swelling for which she sought relief. About two years previously she noticed a small lump growing below the right knee, on the inner side, but as neither pain nor inconvenience were occasioned by the swelling, she allowed it to increase to its present size, and to become both tender and painful, before seeking relief.

On admission, a tumour the size of a hen's egg, firmly elastic, and freely movable, was found over the inner side of the head of the tibia. It was not adherent to bone, but firmly attached to the skin. The pain was increased on lying down, and relieved when the leg was in a dependent position. The veins of the same limb were varicose, and it was at one time thought that the swelling was a hæmatoma. Mr Heath made an exploratory puncture, but nothing but blood escaped. He then made an incision about two inches in length over the tumour, and readily dissected it out. The tumour was described as being of a colloid appearance, but a small quantity of viscid mucoid fluid escaping on section, it was pronounced to be a myxoma. The wound healed without trouble, and the patient was speedily discharged.

Thin sections and little teased out bits of the tumour, stained with carmine, and mounted in glycerine, showed beautifully the typical structure of these growths. In the thicker portions of the specimens only a confused network of delicate fibres was visible, intermingled with cells and nuclei of various shapes; but where the section was thinner the structure was seen to be made up of cells of very varying shape and size, exceedingly delicate, with faintly granular contents (so as to be hardly discernible until stained), and one or more oval nuclei. These cells giving off long slender branches in all directions, formed by the free anastomosis of their branches, an irregular network, the threads of which usually presented a well-marked double contour. In some parts these appearances were modified by the fibres assuming a coarser aspect, and being loosely banded together in wavy clusters, and elsewhere collections of minute oil drops in round and oval masses, showed degenerative changes to be at work. The tumour was not very vascular, but here and there fine capillary vessels could be traced ramifying through it. It will thus be seen that the structure of this tumour resembled

closely that of the mucous tissue of the umbilical cord, and it therefore serves as a good illustration of a typical myxoma.

ART. 239.—*A Case in which Two Diarthrodial Cartilages had been United by Means of True Cartilage.*

By M. PANAS.

(*Gazette Hebdomadaire*, No. 22, 1870.)

In April, 1870, M. Panas presented to the Imperial Society of Surgery an example of soldering by true hyaline cartilage of the two opposed diarthrodial cartilages of the tibia and astragalus in a girl, aged eleven years, the subject of a white swelling of the foot.

After the performance of supra-malleolar amputation, the dissection of the foot permitted M. Panas to make out a complete destruction of the sub-astragaloid and medio-tarsal articulations, which were filled with pus and fungosities :—caries with central necrosis of the calcaneum, and finally a cartilaginous bond of union between the astragalus and the tibia and external malleolus. This last fact, unique of its kind, induced M. Panas to bring the case under the notice of the society.

To the naked eye the intermediate cartilage seemed to be formed in three layers. The superior and inferior layers presented the aspect of pure diarthrodial cartilage; the same with the central layer, except that this was not quite so transparent. The contiguous osseous surfaces were healthy. The fundamental substance of the cartilage presented at all parts the properties of true cartilage. The single demarcation which appeared to exist between the old cartilages and the new material uniting them consisted in a tissue with the fundamental substance of the latter. The cartilage cells were very numerous at all parts. In the neighbourhood of the section, near the centre of the cartilage, the cells were elongated in the direction of the long axis of the limb, and had multiplied and become massed; they presented the histological characters of normal cartilaginous cells.

In the study of ankylosis resulting from white swellings, it has hitherto been admitted that the pre-existent cartilage either becomes absorbed or exfoliates, and that the osteophytic fungosities then undergo cellular or osseous organization, in order to produce fibrous or osseous ankylosis. This preparation demonstrates, M. Panas states, that there is another kind of soldering, that of two cartilages having between them a piece of true hyaline cartilage.

ART. 240.—*On the Treatment of Rupture of the Ligamentum Patellæ by Elevation and Immobility of the Lower Limb upon an Inclined Plane.*

By DR. SISTACH.

(*Archives Générales de Médecine*, Septembre, 1870.)

Dr. Sistach concludes an exhaustive article on this subject, with the following remarks:—

“1. Transverse fractures of the patella and ruptures of its tendon and ligament offer the same indications for treatment to the majority of surgeons who employ, with some few slight modifications, the same modes of treatment for these three lesions.

“2. To prevent or combat primary or secondary traumatic inflammation, whether intra or extra-articular; to bring together, after the disappearance of the inflammatory signs, the parts accidentally divided, and to keep these in contact: such, up to the present day, has been the three-fold object to pursue in the therapeutics of these diverse lesions, in the same manner that antiphlogistics, refrigerants, rest, and good position of the limb, with the ulterior employment of various bandages and apparatuses, have been the numerous agents that have hitherto been put into use in order to bring about a cure.

“3. If the majority of modern surgeons recommend elevation of the lower limb upon an inclined plane in the treatment of rupture of the ligamentum patellæ, they are all unanimous in recommending or employing simultaneously bandages which are intended at the same time to assure the immobility of the limb, and to exert from above downwards upon the patella more or less powerful pressure.

“4. The efficacy of the inclined plane employed to the exclusion of every other means in two cases of ligamentous rupture, complicated in one case with transverse fracture of the patella, and in the other with complete tearing away of an osseous lamella from the tibia, seemed to demonstrate the inutility of all bandages and compressing apparatuses employed under like circumstances.

“5. The mode of healing of ruptures of the patellar ligament seems to me to have been hitherto generally misunderstood, if not in its ultimate result, at least in its physiological significance, its progressive evolution and also in the therapeutical indications which may be derived from it.

“6. In my opinion there is produced a veritable tendinous regeneration between the divided and retracted extremities of the patellar ligament, and this regeneration presents in its evolution successive transformations which identify it with tendinous reproduction after subcutaneous section.

“7. There is no need then to occupy one's mind with an illusory co-adaptation of the ruptured ligamentous extremities, nor to exert painful and useless pressure upon the patella, nor to envelope the whole of the lower limb in a compressing bandage. A good position of the limb and immobility prolonged until the complete re-establishment of

the continuity of the ligament by a newly-formed tendinous product, such are the two sole and indispensable conditions to fulfil, in the treatment of ruptures of the patellar ligament.

"8. During the first few days after the accident, the gradual diminution of the articular swelling of the knee and the incessant approach of the patellar ligament to the crest of the tibia, constitute two associated and simultaneous facts, both of them favourable to tendinous regeneration, and to the proscription of all compressing appliances in the treatment of this lesion.

"9. After the cessation of the inflammatory period, and as soon as the patella has regained its normal position, bandages and other appliances can have no action upon the ligamentous retraction which, at such a stage, is the only obstacle to the co-adaptation of the divided extremities.

"10. As, on the one hand, these compressing bandages and apparatuses have at times aggravated and set up primary inflammation, and as, on the other hand, they may produce atrophy of the limb, and even local scurvy, it results that at all periods of the treatment of a ligamentous rupture, these bandages and appliances may often be hurtful, never efficacious, and, at the least, always useless.

"11. The duration of the treatment of rupture of the patellar ligament ought to be subordinate to complete solidification of the tendinous blastema exuded at the seat of the rupture.

"12. In the same way that frequent displacement of osseous fragments is a powerful cause of non-consolidation of a fracture, so premature movements applied to a limb affected with ligamentous rupture, oppose an obstacle to the regular evolution of the tendinous blastema and may determine elongation of the ligament, absence of its regeneration, or even abnormal adhesion of its ruptured extremities, and as an ultimate and constant effect, weakness or uselessness of the limb.

"13. In the treatment of the ruptures of the patellar ligament, complete extension of the limb is preferable to its flexion, because by diminishing as much as possible the separation of the divided extremities of this ligament one realizes the most favourable conditions for tendinous regeneration.

"14. In transverse fractures of the patella the progressive diminution of the articular swelling also determines progressive co-adaptation of the osseous fragments. Later on the fractured surfaces come into immediate contact under the influence of a retraction which is probably produced by the surrounding fibrous tissues.

"15. Although the articular stiffness of the knee which, according to Professor Malgaigne proceeds: first, from the intensity of the inflammation; secondly, from the application of a bandage during the period of inflammation; thirdly, from the pressure of the apparatus; and fourthly, from too prolonged immovability of the limb; although this stiffness cannot be avoided by using any special bandage or apparatus, it is still evident to me that the inclined plane suppresses the majority of the causes of this consecutive accident, and by this very means will diminish its frequency.

"16. As the duration of the immobility of the limb should be subordinate to the solidification of the tendinous blastema, no mode of treatment

will enable us to avoid this cause of articular stiffness, unless by opposing the normal evolution of the ligamentous regeneration, and thus giving rise to other remote accidents of a severity still more compromising for the functions of the limb.

“17. As the tendon and the ligament of the patella present great analogies with regard to their sheaths, their vascularity, their functions. their intimate connexions and likewise in regard to their traumatic lesions, which present the same therapeutical indications, and necessitate the same means of treatment, I hold that we are able to make the deduction that in rupture of the tendon the inclined plane will render similar service, and lead to the same physiological result.

“18. The regular and exact consolidation of fracture which I have obtained by the aid of the inclined plane, goes to confirm the success which Professor Jargavay has also obtained on his part by position alone of the limb to the exclusion of every kind of compressing bandage.”



PART III.—MIDWIFERY.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 241.—*Mechanism of Production of Face Presentation.*

By J. MATTHEWS DUNCAN, M.D.

(*Edinburgh Medical Journal*, May.)

Dr. Duncan states that "it has always appeared to him beyond a reasonable doubt, that the immense majority of face cases are the result of derangement of the usual mechanism of the first part of the progress of the foetal head through the pelvis; or, that presentation of the face is the result of a displacement of the vertex backwards as regards the child, the extension of the head being produced at or near the brim of the pelvis by the propelling power of labour."

Dr. Duncan considers it highly probable that the chief cause of face cases is obliquity of the uterus in any direction, insuring a curvature of the genital canal at the brim of the pelvis; that this cause operates when the forehead of the child is placed near the concavity of the curved canal, or nearest the line of the propelling force; and that the dolichocephalous form will greatly favour the transformation under these circumstances of a vertex into a face case.

ART. 242.—*Remarkable Case of Complex Labour.*

By THOMAS MOORE MADDEN, M.D., Assistant Physician to the Dublin Lying-in Hospital.

(*Dublin Quarterly Journal of the Medical Sciences*, May.)

Dr. Madden communicated the following, he considers, unparalleled case to the Dublin Obstetrical Society:—

February 9th, 1870. I was sent for, at 7.30 P.M., to visit J. S., of 7, Moore Street, a patient attended by the pupils from the extern maternity of this hospital. She had been in labour, and the liquor amnii had been evacuated for twenty-four hours. The pupil in charge of the case (Mr. E. B. Roche), to whose notes I am largely indebted, was not sent for till an hour previously, *i.e.*, 6.30 P.M., when on examining her he found about three

inches of the cord prolapsed, and two feet, with a rounded tumour behind, then presenting. He, not unnaturally, concluded this was a breech ; and as the cord was pulsating strongly, endeavoured to return the prolapsed funis. In doing this he discovered, to his great surprise, that the rounded tumour he felt was not the breech but the head tightly jammed down through the brim by the closely contracted uterus. He then made a decided attempt to push the feet and cord above the head, but so tightly were they caught between the head and the pelvis that he could make no impression on them. He now sent for assistance ; and endeavoured in the mean time to keep the pressure off the funis. On my arrival I found Mr. Roche's account of the presentation perfectly accurate. "The feet were presenting at the posterior part of the vagina, the heels to the sacrum, the toes pointing directly forwards. The feet could be circumscribed and followed up to the lower part of the legs, where they were tightly caught between the head and the promontory of the sacrum. There was a loop of the funis, about three inches, prolapsed between the legs, and pulsating strongly in the intervals of the pains. The head lay in the second position, or rather more transverse, and was jammed down upon the feet and cord ;" the pulsations in the latter now ceasing during each pain. The uterus being very tightly contracted on the foetus, and the liquor amnii having been evacuated for twenty-four hours, and knowing from experience on other occasions the great difficulty of performing version under these circumstances, I proceeded to apply the long forceps in the hope of bringing down the head past the feet ; they however failed to make any impression, although I tried them in the occipito-frontal as well as in the transverse diameters, and as they slipped in both, after several attempts, I abandoned them.

The funis was still pulsating, but less strongly than when I first arrived. She was now put under the influence of chloroform, by Mr. A. C. Roberts, and this had the effect of so far relaxing the parts that I was enabled, though with considerable difficulty, to drawn down one foot ; this I could not do before the chloroform was given. The foot was then secured by the attending pupil whilst I reintroduced my hand, and, using some force, succeeded in pushing back the head through the brim of the pelvis and into the uterus, at the same time making forcible traction on the foot. After these efforts had been continued for some time without apparent effect, the foetus suddenly rotated, the foot came down, the head receded, and the delivery was now easily accomplished. The child was born alive, though apparently still-born, and was resuscitated by the diligent application of the ordinary measures. There was a deep indentation on the right parietal bone where the head had been compressed between the feet and the pelvis. She made a good recovery, and some days after I learned that the mother and child were doing well.

There appear to me to be two points of interest in the foregoing case ; the first is the extreme rarity of a compound presentation such as this ; the second is the length of time which had elapsed between the rupture of the membranes and the birth of a living child in this case of prolapsed funis.

The extreme rarity of a case such as that just described may be inferred from the fact that in none of the statistical reports of the Rotunda Dublin Lying-in Hospital, which, conjointly, afford the largest, and perhaps the most accurate, mass of obstetric statistics in existence, is there any mention of a similar case of complex labour.

"Mauriceau," says Dr. Madden, "is the only writer he knows of who records a case nearly analogous."

ART. 243.—*State of the Pulse immediately before and immediately after Parturition.*

By Dr. HÉMEY.

(*Dublin Quarterly Journal of the Medical Sciences*, May, from *Archives Générales de Médecine*.)

The pulse during the puerperal state was made the subject of a series of observations by Dr. Hémeý in 1864, while serving as interne under Dr. Empis, and he believes his observations established two remarkable phenomena: First, the lowering of the pulse (already noted and studied by M. Blot), with regard to which Dr. Hémeý says his observations confirm those of Blot. Second, the inequality and irregularity of the pulse, which had not hitherto attracted attention.

Dr. Hémeý's observations seem to have been made with very great care, and are recorded with great minuteness of detail, and therefore seem worthy of having an abstract of them recorded here; but the results arrived at are different from those of Dr. M'Clintock, and also from those arrived at from a series of observations made by the writer of this report in the Coombe Lying-in Hospital.

Dr. Hémeý takes 75 as the average pulse of a healthy woman. Before labour it is from 75 to 84; but he does not count any pulse as lowered, unless it is 60 or under, and by adopting this as his standard, he believes he excludes all doubtful cases from his tables. He thinks at least one-sixth of all newly-confined women have their pulse lowered. In one case the pulse was as low as 44; in many he found it 48; and in a great number 52. The lowering showed itself most frequently some hours after labour, and continues sometimes without variation; in some it increases during the eight days. At the end of the third, fourth, or fifth day the pulse sometimes becomes relatively more frequent and falls again, or it may preserve this frequency to the end; but these changes seem to depend on accidental circumstances, and independently of such the lowering appears to have its maximum at the end of the second day from labour, and to diminish gradually and cease about the tenth day.

Out of 100 consecutive cases in which the daily state of the pulse was recorded in the Coombe Lying-in Hospital, it was found as low as 60 in five cases and within the first twenty-four hours after the delivery; and in each it had risen to from 70 to 84 on the second day, and maintained this average as long as the patient was in the hospital. In one case the pulse was as low as 56 eight hours after labour. This woman had been delivered in the street, on her way to the hospital. On the second day the pulse was 72, at which it remained till the fourth day, when it fell to 65. On the fifth day it was 72; and on the seventh, which is the last observation recorded, it was 84. This was the only case of the series in which the pulse was under 60.

The duration of labour, unless it be prolonged so as to do local or general injury, does not seem to influence the changes the pulse undergoes, but the occurrence of gastric derangement with headache, of a foul tongue with constipation and hot skin, on the second day may raise a pulse to 80 or 88, which the evening before was only 56, and

Dr. Hémey observes, as has already been remarked by M. Blot, this increase of 30 is of more importance than would attach to the total number of 80, and the increase is soon proved to belong to a pathological condition by the action of a purgative which reduces the pulse again to 54 or 60. When there is metritis or sloughing of the vagina, or puerperal fever, the characteristic changes of the pulse are more permanent.

Dr. Hémey combined with his researches on the pulse some observations as to presence of sugar in the urine of women lately confined. M. Blot announced its existence, in a paper read at the Academy in 1855, and M. Lecomte denied it in a communication read in the following June; but in 1859, Prof. Bruecke confirmed the statements of M. Blot. Dr. Hémey found that of one hundred newly-confined women, twenty-seven had a quantity of sugar, varying from eight to eighteen grammes per litre in their urine; the urine of thirty-five presented traces of it only; and in thirty-eight no appreciable trace of it could be discovered. Its presence was of short duration; even when most abundant, it could be found for a day or two only, and it did not seem to be in any way connected with the secretion of milk, and it did not seem to influence the condition of the pulse, for though in fifteen of twenty-seven cases where it abounded, the pulse was quick; in twelve other cases it was remarkably slow.

With regard to the influence of the secretion of milk, Dr. Hémey found that from the second to the fifth day, the pulse did not undergo any notable change in two hundred and eighty women out of four hundred; he believes, however, that in many cases where the pulse did not seem to undergo any change from the second to the fourth day, it was because the lowering of it was interfered with by the state of the breasts, and he finds the best nurses, and those who have the most abundant supply of milk, are those in whom the pulse is lowest, and that without interruption from the second to the tenth day.

The period of pregnancy at which labour occurs does not seem to influence the changes undergone by the pulse in any way. In one case when it occurred at the end of the fifth month in consequence of a fall, the pulse, which before labour was 80, fell to 76, 68, and 52, on the following days, and then rose again to 72; but in other cases of premature labour no lowering of the pulse was observed. Where the foetus is dead for some time before labour sets in, the lowering of the pulse seems to begin at the time of the child's death, rather than when it is expelled, and Dr. Hémey gives a series of cases illustrative of this as the fact is made use of in progress of the essay.

After-pains may not only, as M. Blot has already remarked, coincide with a slow pulse; but, according to Dr. Hémey's observations, when they occur independently of any other pathological condition, they are rarely accompanied by a quick pulse. Moral emotions, however, have a great influence in raising the pulse; diet does not affect it unless the process of digestion be deranged, and then the pulse is more easily affected in the puerperal state than it would be at other times. Change of position will also affect it more notably at this time, so that a woman lying down may have her pulse 68, and it may rise to 104 when she sits up. Primiparae seem less disposed to have the pulse lowered than multiparae,

perhaps because the former are more subject to the multitude of little causes which tend to accelerate it.

As a prognostic sign, Dr. Hémey looks on this lowering of the pulse as most favourable. It occurs most frequently when the health of puerperal women is best, and it is oftenest met with among the vigorous and those who have the most abundant supply of milk; and he has never known a woman who presented it to be affected with puerperal symptoms of any gravity.

As to the cause of this lowering of the pulse, Dr. Hémey argues that it depends on an increased arterial tension caused by the rapid withdrawal from the general circulation of a certain number of arterial trunks; that is to say, an increased arterial tension caused by the large quantity of blood hitherto required by the uterus being thrown into the general circulation. It may be regarded as proved, he says, and it has been demonstrated by the sphygmograph, that the frequency of the pulse is in the inverse ratio to the arterial tension; and it can also be demonstrated by the same instrument, that the arterial tension is increased by compressing one or more arterial trunks, so as to withdraw them from the general circulation. Marey and Blot, he says, assign the same cause; but he finds new proofs of its being the cause in the facts related in reference to premature confinements; to the cases where the child died before birth; and in the effect of the seasons. In premature confinement the same cause for the increased arterial tension exists as when birth takes place at the full term, and when the child dies before birth it is the supply of blood to the uterus is diminished, and consequently it is then the pulse is lowered, and not after the child is expelled; and it is well known that cold increases the arterial tension, and the lowering of the pulse is most marked in the cold seasons.

The analysis of four hundred observations gives ninety-four cases in which the rhythm of the pulse was altered; most frequently it was irregular and uneven at the same time; exceptionally it was irregular or unequal only. Dr. Hémey has met with these phenomena but twice before labour, and in both cases the patient had old organic disease of the heart. In all the other cases the irregularity showed itself from the first to the tenth day after labour, with the exception of three in which it did not appear until the fifteenth or eighteenth day; but it is to be noted that very few of the observations extended beyond the twelfth day, so that the extreme limit of the occurrence has not been fixed. In some cases the irregularity disappears quickly, but may return soon, and it is rare to find it persist more than six days without interruption. The irregularity and inequality may accompany one another, or exist separately, and these modifications always supervene very rapidly on one another. Of the ninety-four cases, the irregularity without inequality was only observed in twelve, and the inequality without irregularity in eight; very often the irregularity and inequality exist with the slowness of the pulse, but the slowness may be found without the others, and they may occur with slight acceleration of the pulse.

The prolongation of labour does not of itself seem to influence these phenomena, but when it causes any injurious consequences the irregularity disappears. It is in fact rare to find a pulse febrile and irregular.

There does not seem to be any relation between these phenomena and the secretion of milk, except that milk fever, like all other febrile conditions, will cause them to disappear; neither does the term of pregnancy, nor the state of the life or death of the child seem to produce any effect; nor do moral emotions, except so far as by quickening the pulse they cause irregularities to disappear. Pursuing the investigations under the same heads as in reference to the slowness of the pulse, Dr. Hémeý does not find that the diet or age of the patient, primiparity or multiparity, nor yet the season of the year exercises any influence; nor does he think the presence of these phenomena indicates anything unfavourable as to the recovery of the patient; and he is unable to suggest any cause for them beyond some obscure condition of the nervous system.

ART. 244.—*Pregnancy without Menstruation.*

By JAMES YOUNG, M.D.

(*Edinburgh Medical Journal*, July.)

Dr. Young read to the Obstetrical Society of Edinburgh some statistics which he had collected, showing how frequently pregnancy had occurred where the women had never menstruated more than once or twice during ten or twelve years, and where six or eight children had been born. Among other cases, the following two might be specially mentioned:—

CASE 1.—Mrs. M. was married on 10th September, 1859; menstruated in October thereafter, but not again to this date (June, 1870), and she has had six healthy living children.

CASE 2.—Mrs. J. was married in January, 1856, and has only menstruated three times up to this date (June, 1870), and is now the mother of nine children, seven of whom are alive.

Dr. Young remarked that in both cases the patient had menstruated regularly previous to her marriage.

Mr. Pridie said he had attended a girl in her first confinement, who was fifteen years of age and had never menstruated; and he knew of a lady who had been married for twelve years, had seven children, and had only been seven or eight times unwell.

ART. 245.—*Case of Extrauterine Pregnancy.*

By J. HALL DAVIS, M.D., F.R.C.P.

(*British Medical Journal*, November 19.)

At a meeting of the Obstetrical Society of London, held November 2nd, Dr. Hall Davis reported a case of extrauterine gestation of the left ovarian variety, occurring in the third pregnancy of a married woman, aged thirty-nine. When first seen, the physical signs induced him (Dr. Davis) to suppose that it was a case of retroverted uterus

containing a foetus, and attempts at reduction were made. On the same evening, violent vomiting took place, and the swelling in the posterior part of the pelvis disappeared leaving what seemed to be an empty sac. On abdominal examination, the hard head of the child was felt in the right lumbar region, apparently immediately under the abdominal wall; and below it, another smaller prominence. It was not movable, and there was no constitutional disturbance. Dr. Davis believed that the child had escaped by rupture into the abdominal cavity, during vomiting. In consultation, however, this diagnosis was not supported, and, therefore, the operation of abdominal section, which he believed to be indicated, was not performed. The patient died on Oct. 28th, the sixth day after the rupture. The necropsy confirmed the diagnosis of the escape of the child into the abdominal cavity, and proved that the pregnancy had been extrauterine. Dr. Davis considered that the only chance of saving the patient, although it might be a remote one, would have been abdominal section and removal of the child, as also of the cyst with its placenta, and the effused blood.

ART. 246.—*Acute Leucocythemia in Connexion with Pregnancy.*

By R. PATERSON, M.D.

(*Edinburgh Medical Journal*, June.)

Dr. Paterson relates some interesting cases of acute leucocythemia in connexion with pregnancy.

Referring to the researches of Vidal and others, which tend to show that the disease is essentially chronic, and only recognisable by the occurrence of splenic enlargement, he shows that it may be recognised before the splenic enlargement is detected or exists by the microscope. The splenic and glandular enlargement in pregnancy indicate an advanced stage rapidly tending to death.

CASE 1, primipara, æt. 20.—In early months she had severe sickness, which disappeared, leaving her in good health. One month before confinement she had a sallow look, hollow eyes, pulse 90, slightly feverish at night; urine giving no trace of bile. Labour, natural at term; child, healthy. The uterus contracted well, but very troublesome hæmorrhage followed the expulsion of the placenta. About the sixth day a marked change for the worse took place; pulse, 120; skin hot, with increased tawiness; decided enlargement of liver and spleen; slight increase in size in glands of neck. The blood contained an unusual number of leucocytes or white cells. A fatal issue was foreseen, and came in twenty-four hours. Within this time the glands of the neck enlarged rapidly, with increased difficulty of swallowing; any attempt to swallow in the horizontal posture produced such feeling of suffocation that she jumped upright, gasping for breath. Death on the evening of the 11th day. Autopsy refused.

CASE 2; also primipara.—Seen in consequence of profuse post-partum hæmorrhage. History during pregnancy similar to Case 1. She became sallow towards end. Considerable enlargement of lymphatic, thyroid, and other glands; pulse, 120; blood full of white cells. The gland swelling increased, and the patient was cut off by asphyxia fourteen days after labour.

Dr. Paterson has detected the disease in other cases during pregnancy. Vidal says it begins in four cases out of ten during pregnancy. Paterson gives two cases which ended successfully. Great pains were taken to counteract the hæmorrhage, which is so imminent in these cases. He makes the incidental observation that, although the mother's blood in all three cases was charged with leucocytes, yet the children suffered no way, and were born robust and healthy.

ART. 247.—*The Stethoscope as a Means of Ascertaining the Sex of the Child.*

By JAMES CUMMING, M.D.

(*Edinburgh Medical Journal*, June.)

Dr. James Cumming communicated to the Obstetrical Society of Edinburgh some interesting investigations on this subject.

TABLE I.—MALES.

The first case was one of twins, the heart of the one fœtus was heard in the right groin beating 110 in the minute, and on delivery it proved to be a male; the second heart was heard in the left hypochondrium beating 154, and on delivery it was found to be a female.

2. Fœtal pulsation, 138 per minute.				15. Fœtal pulsation, 116 per minute.			
3.	"	"	138	16.	"	"	120
4.	"	"	135	17.	"	"	120
5.	"	"	130	18.	"	"	138
6.	"	"	130	19.	"	"	125
7.	"	"	132	20.	"	"	140
8.	"	"	132	21.	"	"	140
9.	"	"	140	22.	"	"	137
10.	"	"	132	23.	"	"	140
11.	"	"	140	24.	"	"	141
12.	"	"	136	25.	"	"	122
13.	"	"	133	26.	"	"	120
14.	"	"	134				

TABLE II.—FEMALES.

1. Fœtal pulsation, 150 per minute.				9. Fœtal pulsation, 140 per minute.			
2.	"	"	142	10.	"	"	152
3.	"	"	140	11.	"	"	140
4.	"	"	150	12.	"	"	143
5.	"	"	144	13.	"	"	144
6.	"	"	140	14.	"	"	141
7.	"	"	140	15.	"	"	160
8.	"	"	144				

From these two tables it seems that when the pulsation varies from 120 to 140, the probability is that the fœtus will be a male, and when the pulsation varies from 140 to 160, the fœtus will likely be found to

be a female. But there are some exceptions to these facts. In three cases in which the pulsation was from 150 to 160, the fœtus proved to be a male; and in fifteen cases in which the pulsation varied from 116 to 138, the fœtuses were found to be females. It therefore appears that there is less frequent variation in the pulsation in the male fœtus than in the female; or rather that there are fewer cases in which the heart's action exceeds 140 in the male, than that it falls below that number in the female.

These tables are exceedingly interesting, however, as far as they go; and the subject is well worthy further attention.

ART. 248.—*Uterine Hæmorrhage.*

By ROBERT BARNES, M.D., F.R.C.P.

(*Lectures on Obstetric Operations* : London, 1870. Pp. 526.)

Dr. Barnes insists on the necessity for caution in the application of cold; it is not to be trusted unless quickly successful in exciting uterine contraction; unless there is sufficient power to respond to the excitation cold will do harm instead of good. He questions the safety of injecting cold water into the uterus, preferring Levret's plan of placing a lump of ice in the uterus.

In post-partum hæmorrhage, where the nerve force is so far exhausted as to fail to respond to the excitation of the ordinary remedies, a new power is necessary, and this is found in the perchloride of iron, which coagulates the blood in the mouths of the open vessels and corrugates the inner surface of the uterus. Four ounces of the strong solution of the British Pharmacopœia, with eight to twelve ounces of water, are to be injected by means of Higginson's syringe, with a uterine tube attached, the tube being passed until the point touches the fundus, and the fluid slowly and gradually thrown up so as to trickle over the inner surface of the uterus.

In cases of abortion, or in non-pregnant women, where the uterus is small and the cervix imperfectly open, it is sufficient to swab out the interior of the uterus with a sponge saturated with the perchloride.

The same author lays down the proposition, "that in all cases of flooding sufficient to cause anxiety before labour, *the puncture of the membranes* is the first thing to be done;" at the same time a firm binder is to be applied over the uterus;—if the hæmorrhage continues, the os uteri itself is to be plugged with a solid smooth piece of laminaria, about four inches long, the calibre of a No. 8 or No. 9 bougie, with a slight curvature at the end. Plugging the vagina is unscientific and illusory. If further dilatation is required the hydrostatic dilators are to be used.

He points out one source of hæmorrhage after labour, which is not sufficiently recognised—namely, lesion of the cervix uteri, the bleeding from which persists even when the uterus is well contracted. The remedy is to apply a powerful styptic, *e. g.* the perchloride of iron, to the bleeding surface.

ART. 249.—*Diet of Parturient Women.**

By HUGH MILLER, M.D.

(British Medical Journal, October 1.)

The author, after referring to the increased attention paid to the study of dietetics in disease, called attention to the very vague instructions still given by obstetric writers on this subject. Particulars of a case were given, in which careful nourishing diet given during utero-gestation, enabled the patient in her last confinement to escape suffering from uterine inertia. From an examination into the physiology of the changes in the uterus and breast, Dr. Miller believed that the fat-cells existing in abundance in the milk during the first few weeks, were due to the changes in the womb after parturition; that the disintegrating uterus was broken up into fat-cells, which were absorbed by the blood, and through the circulation were secreted by the mammary glands. Hence a heat-forming diet was neither necessary nor was indicated, and at times might be positively injurious; whereas a flesh-forming diet, by maintaining the strength, enabled the woman to make up for the waste of tissue during labour, gave her support, and maintained the vigour of her body while the further changes were going on. The author had found great benefit through selecting the parturient woman's diet from as nearly as possible the kind of food which she was in the daily habit of taking, giving it in a liquid form and in diminished quantity. The advantages in adopting a nourishing diet to the mother he believed to be—1. Maintaining her muscular strength; 2. Avoiding irritation to the mammary glands, and enabling her to suckle sooner; 3. Securing a quicker and better recovery.

ART. 250.—*On the Application of the Long Forceps.*

By ROBERT BARNES, M.D., F.R.C.P.

Lectures on Obstetric Operations: London, 1870. Pp. 526.

In the application of the long forceps Dr. Barnes gives the following rule:—

“The position of the head may be practically disregarded. The pelvic curve of the blades indicates that these must be adapted to the curve of the sacrum in order to reach the brim. They must, therefore, be passed as nearly as may be in the transverse diameter of the pelvis. One blade will be in each ilium, and the head, whatever its position in relation to the pelvic diameter, will be grasped between them. The universal force of this rule much simplifies and facilitates the use of the instrument. Not only does it apply to the position of the head in relation to the pelvic diameters, but also to all stages of progress of the head, from that where it lies above the brim, down to its arrest at the outlet.”

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-upon-Tyne.

ART. 251.—*A Case of Induction of Premature Labour by Means of the Uterine Douche.*

By W. WHALLEY, M.R.C.S., &c.

(*The Lancet*, November 26.)

The subject of this operation, Mrs. E., aged thirty-four years, had been delivered thirteen times at the full term, her labours being usually lingering and difficult. On the last three occasions craniotomy was resorted to. The causes of difficulty in the above case were referable to a diminution of the cavity of the pelvis at the brim in the conjugate diameter, and to the foetus being larger and more strongly ossified than usual. Mr. Whalley delivered the patient on two occasions. In both, on arrival, he found the membranes ruptured, and some portion of the head protruding through the brim of the pelvis, while the principal bulk remained above. Mr. Whalley applied the long forceps without difficulty, but was unable to advance the position of the head. In both, the uterine parietes so strongly embraced the foetal body, that version could not be practised with impunity. The patient consulted Mr. Whalley again in August last, when about six months and a half advanced in pregnancy. On Sept. 7th, at 1 P.M., being exactly seven months since she last menstruated, Mr. Whalley injected, by means of Barnes's syringe, a gentle stream of warm water against the os uteri, for about five minutes. On Sept. 8th, at 5.30 P.M., he introduced the tube of the syringe about an inch within the os uteri, external to the membranes, carefully detaching the latter, and then injected a stream of warm water for about six minutes. On the following morning, about 6.30, Mr. Whalley was summoned to the patient, and found the os completely dilated, and the membranes protruding into the vagina. On rupturing them a foot and funis presented; the pains were strong and frequent, yet more than forty minutes elapsed before delivery could be effected. The foetus was well formed, but exhibited no signs of life when born. The usual means of resuscitation were practised for a considerable time, but proved unavailing. The mother made an excellent recovery.

The above case affords additional evidence of the simple, easy, and efficient mode of inducing premature labour by the aid of the uterine douche. Had the presentation been natural, the child would undoubtedly have been born living.

ART. 252.—*On the Influence of Constitutional Syphilis upon Pregnancy.*

By Dr. WEBER.

(*Berliner klinische Wochenschrift*, No. 1, 1870; *Archives Générales de Médecine*, No. 36, 1870.)

The solution of this question cannot be definitely established save by the aid of very numerous statistics. The researches made by Dr.

Weber, at St. Petersburg, comprise but forty observations; but these, as they have been carefully taken, are of some value, and may at least serve as an example. Out of the forty subjects in a state of pregnancy, and affected with constitutional syphilis, twelve were in the first month and twenty-eight in the second month. All were subjected to an energetic mercurial treatment, followed by the administration of iodine. Salivation was combated by the external use of chlorate of potash, and neither baths nor ablutions were neglected. According to the indications, energetic cauterizations were made of the labia majora, the vaginal walls, and even the neck of the uterus. Drastics were always avoided.

Of the forty patients, thirty-three left the hospital cured of their syphilitic symptoms. In these pregnancy pursued its course without any disturbances. The remaining seven were delivered at the hospital. Three of these, at the ninth month, gave birth to well-developed children; four were confined prematurely, and one woman among these was attacked with facial erysipelas accompanied by violent fever; another had recurrent fever and slight puerperal endometritis. In six of these patients the sequelæ of delivery were normal.

Thus, out of forty syphilitic pregnant women, in four only was the pregnancy interrupted; that is to say, ten per cent.; and if we consider that the two women attacked with the febrile affection, were by that very fact predisposed to abortion, the proportion falls to two per cent.

In order to appreciate better the value of these results, Dr. Weber has compared them with those which have been furnished to him by the statistics of all the cases of pregnant women affected with various maladies, and treated in the same hospital.

We will cite some of these tables:—

Out of 63 pregnant women who were attacked with recurrent typhus, 23 aborted; or 35·5 per cent.

Out of 4 women affected with erysipelas, one aborted; the mother and infant both dying.

Out of 3 women who were burnt during pregnancy, 1 aborted. Death of mother and child.

In 2 cases of febrile articular rheumatism, there was 1 abortion.

From these statistics, it results that out of 79 cases in which pregnancy was complicated by intense fever, there were 29 abortions, 13 deaths of lying-in women, and 26 deaths of the new-born children.

In pregnancy complicated by some chronic organic malady, 3 women out of 6 aborted. These abortions were followed by death.

From the results of 28 cases, it seems that various slight complications, such as catarrhal affections, contusions, &c., have no bad influence upon pregnancy.

It may be concluded from these comparative investigations, that constitutional syphilis belongs to that class of maladies which have the least influence upon the duration of pregnancy.

ART. 253.—*On Placenta Prævia.*

By T. GAILLARD THOMAS, M.D.

(American Journal of Obstetrics and Diseases of Women and Children.)

Dr. Thomas relates eight cases of this complication, and urges the rapid induction of labour.

"The dangers attendant upon the condition develop themselves most markedly in the first stage of labour, and death not unfrequently occurs before the os externum is dilated to a size not greater than a Spanish dollar. At this time surgical interference, if resorted to to accomplish delivery, often destroys the lives which it is intended to save. The hand forced too soon through a rigid os will often rupture its walls, while a delay without the adoption of the means capable of controlling hæmorrhage will necessarily favour the occurrence of a fatal result.

"On the other hand, should full dilatation of the os have taken place, and the patient be exhausted from sanguineous loss, the practice of rapid artificial delivery will not rarely be followed by fatal prostration.

"There is no question, in my mind, of the fact that when it becomes the recognised practice to resort to premature delivery as a prophylactic measure in these cases, the statistics which have been quoted will be very much improved upon. By resorting to this measure we should be dealing with a woman who is not exhausted by repeated hæmorrhages; the obstetrician would be in attendance at the commencement of the labour, and he would be able by hydrostatic pressure to control flooding, while the same pressure, accomplished rapidly and certainly the first stage of labour."

ART. 254.—*On Tumours of the Pelvis Obstructing Delivery.**

By EDWARD COPEMAN, M.D., of Norwich.

(The Lancet, October 22.)

After referring to the extreme danger of this form of complicated labour, the author said that it was not so rare as might be thought, and referred to a number of cases that had been collected by Mr. Merriman and others. He then proceeded to relate the particulars of two cases that had come under his own observation. In the first case the tumour occupied the posterior portion of the pelvis. Delivery was effected by turning. The mother died on the third day. In the second case, the tumour, which was hard, firm, and immovable, was attached by a broad base to the left side of the pelvis. This case was also delivered by turning, but with extreme difficulty on account of the size of the tumour. The patient made a good recovery. With regard to treatment in cases of this kind, Dr. Copeman remarked that he would recommend puncture of the tumour, but only when it could be ascertained that the contents were semi-fluid or soft enough to be partially evacuated. In other cases he considered turning to be the preferable practice.

* Abstract of a Paper read at a Meeting of the Obstetrical Society of London, October 5.

The President said that all would admire the courage and perseverance which brought about so successful a result in the second case described. He thought that Dr. Copeman had, probably unintentionally, omitted mention of a method of treatment of such cases sometimes applicable—viz., the pushing of the obstructive tumour out of the pelvis, and thus allowing of the descent of the head.

Dr. Playfair said that Dr. Copeman had not alluded to what was the chief cause of danger in labour complicated by tumour. In 1867, he (Dr. Playfair) had read a paper before this Society "On the Treatment of Labour Complicated by Ovarian Tumour," in which he had collected the details of all the cases of this complication he could meet with, amounting to fifty-seven in all. Of these thirteen had been left to nature—that is, the tumour had been sufficiently small to admit of the child being squeezed past it. Of these thirteen cases, close upon one half had proved fatal to the mother. In favourable contrast were the nine cases in which the tumour had been punctured, and in which, therefore, the tumour had collapsed, and had not been subjected to pressure; since every one of them had terminated favourably. The explanation of the great mortality in the former case was no doubt the contusion and pressure to which the tumours had been subjected, which set up a low form of diffuse peritonitis. Possibly this may have been the cause of death in the first of Dr. Copeman's cases. The inference from these facts seemed undoubtedly to be that by far the best way of treating such cases is to puncture the tumours when they have fluid contents, and this even if there seems room for the child to pass; and even in cases where the tumour seems solid, an exploratory puncture should be made before anything more formidable is done, as tumours apparently solid have often been found to contain fluid.

Dr. Protheroe Smith said that the opinion expressed by Dr. Playfair was of great practical value, as it was frequently found that the tumours obstructing delivery were cystic, or subfascial deposits of serum, blood, or pus; and in such cases he recommended the puncture of the tumour by means of his needle trocar. In a case lately operated on in the Hospital for Women he had evacuated by means of it almost an ounce of thick pus from a tumour, the size of an orange, growing from the back wall of the vagina, in a patient in the sixth month of utero-gestation. The operation was only like the prick of a pin, and required no after-treatment.

Dr. Barnes said that each case must be dealt with according to its individual features. We had to consider the size, position, structure, attachments, and firmness of the tumour, and its relations to the child. If the tumour is movable, and can be pushed out of the way, by all means do it; but in many cases this is impossible. We must then ascertain if it contains fluid, and, if so, lessen its bulk; or possibly the tumour may admit of being removed altogether. To obviate the great danger to which Dr. Playfair had referred, that of crushing the tumour by the passage of the child, it was necessary, when you could not reduce the tumour, to reduce the bulk of the child; and in extreme cases one might be driven as a last resource to the Cæsarean section. He had recently seen a case where a woman died of septicæmia, the result of the bruising of the tumour against the walls of the pelvis.

Dr. Mudge said that he had attended a case where a large fibrous tumour had prevented the descent of the child's head. It was first punctured, and then, with great difficulty, pushed above the brim. The patient afterwards died of peritonitis, the seat of puncture showing signs of having been the starting-point of the disease. He mentioned this as an argument against its too free employment.

ART. 255.—*Puerperal Convulsions.*

Under the care of Dr. HALL DAVIS, at the Middlesex Hospital.

(*British Medical Journal*, December 3.)

The patient in this case was a primipara. The attack followed delivery, and was preceded by cephalalgia. Anasarca, with albuminuria, was present. The attack came on during sultry, cloudy weather, accompanied by lightning and thunder.

Ellen A., married, aged twenty, of good previous health, had lived in London for several years. She was plethoric, short-necked, and full-chested, and was delivered naturally of a fine living male child on August 1st, after twenty-four hours' labour. Three days before delivery, she complained of pains in the head, and had cedema of the lower extremities, eyelids, and hands. Labour went on favourably; but two hours afterwards she was seized suddenly with very violent epileptiform fits: the face became livid, the jaws firmly locked; the tongue was bitten; and foam issued from the mouth. There were clonic contractions of the muscles of the whole body. The fits recurred in quick succession until she was placed fully under the influence of chloroform. This was given for various periods on four occasions, between the hours of twelve and four. Each time, when its effects passed off, the fit became as violent as before. Ice was applied to the head; afterwards blisters at the nape of the neck. A dose of ten grains of calomel and a minim of croton-oil was administered, but did not act for six hours. The fits continued severe; and the pulse, although in frequency only 84, was very full, hard, and bounding. Thirty-four ounces of blood were taken from the arm. The pulse after this rose to 96, and became soft and compressible. At 7.30 P.M., three hours after the venesection, she had no return of the fits. She was conscious, and complained of great headache and soreness of the tongue. The urine contained one-third albumen.

Aug. 2nd. The patient had had no return of the fits, and had slept fairly. She still complained of headache. She was thirsty. The skin was moist. Pulse 98, regular, full, but not very compressible. There was no tenderness over the abdomen. There was a fair amount of lochial discharge. There was a good secretion of milk.

Aug. 3rd. The headache was better. The bowels were open. Pulse as before. The urine contained one-fifth of albumen. She was ordered to take ten grains of bromide of potassium and five minims of spirit of chloroform three times a day.

Aug. 4th. The headache was better; the appetite improving. She seemed better in every respect. The medicine was continued.

Aug. 6th. She was free from pain, and going on very well. No albumen was found in the urine.

Aug. 8th. She felt rather weak, but complained of no pain. The mix-

ture of bromide of potassium was repeated. Under a tonic and nutritive treatment the patient made a good recovery.

In the course of some remarks on the above case, Dr. Davis observed that it was an illustration of puerperal eclampsia occurring in a plethoric primipara, and exemplifying on the one hand the failure of anæsthetic treatment, and on the other the prompt success of blood-letting, in this form of the disease. Before the attack, the case had exhibited the very usual premonitory signs—anasarca and albuminuria—consequences of renal congestion, due to pressure of the gravid uterus upon the kidneys, the influence of that pressure being increased by the plethoric condition of the patient. That the albuminuria, and presumably accompanying presence of urea and of other urinary excrementitious matters, in the blood, was not attributable to organic disease of the kidney, was apparent from the fact that the excreting function of the kidneys was fully restored within a few days after delivery. As appears in the history of other reported cases, a highly electrical condition of the atmosphere preceded and attended the outbreak of the attack in this patient, and might possibly have contributed in some degree as a cause. In the after-treatment, the bromide of potassium appeared to be of service in removing the cephalalgia. Dr. Davis next referred, by way of contrast with the above case, to another, which had recently been submitted to him for his opinion and advice—an example of the asthenic form of the disease occurring in the first stage of labour, and demonstrating the complete success of the anæsthetic treatment by chloroform. Up to its administration, labour had not advanced; and the convulsions had persisted throughout the day, although the bowels had during the day been fully cleared out. So soon, however, as anæsthesia was fully induced, the paroxysms of the disease were entirely and permanently subdued. Dilatation of the os uteri now progressed rapidly to full dilatation; and, no obstacle being present, the labour was rapidly and satisfactorily completed, without resort to instrumental aid. In this case, also, a considerable amount of albumen was detected in the urine drawn off by the catheter, before anæsthesia was had recourse to. (Edema of the face and extremities had in this instance also preceded the convulsions.

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 256.—*On Milk Fever.*

(*Gazette Hebdomadaire*, No. 25, 1870.)

Milk fever is one of those questions of practice in which it seems easy to lay down a definite judgment. Still, although it was considered as a constant phenomenon by the ancients, milk fever is denied by modern authors of great authority. Carus, in 1820, showed how numerous were the causes which might lead to symptoms united by common observation under the name of milk fever. Velpeau and Depaul considered the supposed rigor of milk fever to be a phenomenon independent of the physiological secretion of milk. In a thesis, written

1867, Dr. Chappot collected a certain number of observations, which show that milk fever does not exist unless in very exceptional instances.

The author was inspired by the precepts of Prof. Depaul, and his cases are accompanied by thermometrical tracings. In Germany extensive investigations have been made on this subject, and are a model of the applications of thermometry.

Winckel (*Die Pathologie und Therapie des Wochenbetts*, Berlin, 1869), whose reported cases are 200 in number, arrived at the conclusion that it was necessary to abolish the expression "milk fever," because in the physiological establishment of lactation there is not the elevation of temperature characteristic of fever. There is at the most a subfebrile fever of $30^{\circ} 2'$ centigrade. If any fever be present it is due to inflammatory complications on the part of the breast or of the genital organs. Besides, even the authors who retain the name of milk fever, acknowledge that it is very rare. Schroeder observed it in 7 only out of 135 lying-in women. Schramm, in 100 women, noticed 3 cases of isolated milk fever, and 8 cases of fever accompanying disturbances of the genital organs.

At the same time these authors acknowledge that milk fever may be associated with exaggerated congestion of the breasts, or with a non-suppurative mastitis, or to an inflammatory irritation of the lymphatics. Prof. Halbertsma, of Utrecht, has also recently submitted the question to rigorous observation, and has published some conclusions, to which we direct attention.

The observations of Halbertsma related to 134 lying-in women, whose temperature was taken twice in the day. All important circumstances connected with the labour were carefully noted.

With 87 primiparæ the temperature, in 14 cases, was at 38° C., or some point below this; in 60 cases it was above 38° . With 56 multiparæ the temperature was 38° C., or less in 31 cases, and above 38° C. in 25 cases.

Temperatures of 38° C., and below this point, have been observed in the most simple lyings-in. With these cases there were some in which there was slight, and others in which there was well-marked swelling of the breasts; the secretion of milk also varied, being abundant in some, moderate in others. In all the cases less than an hour intervened between the loss of the waters and the birth.

When this period has exceeded one hour, there is generally a temperature of about 38° C. In other cases there are lesions of the genitals, or inflammatory affections of the breasts or nipples; generally the elevation of the temperature is proportioned to the interval between birth and the rupture of the membranes, and to the intensity of the pains felt during this period.

The relation between the swelling of the breasts and the elevation of the temperature could not be established.

In certain cases there were no differences between the temperature observed before or after lactation; sometimes the temperature was higher before lactation, in other cases, on the contrary, it was more elevated after the period.

From these researches the author deduced the following conclusions:

There is no reason for attributing exclusively to the lacteal secretion

the subfebrile elevation of temperature observed on the third and fourth day of the lying-in. On the contrary, the phenomena which take place in the genitals have a great and, apparently, a preponderating influence.

The febrile temperatures which alone could only be considered as associated with "milk fever," are generally the consequences of a traumatic or infectious fever.

There is no reason for admitting "milk fever," at least for reserving this name for a non-suppurative inflammation. Such an expression is in contradiction to the history of inflammation in various organs.

ART. 257.—*On the Symptoms and Diagnosis of Membranous Dysmenorrhœa.*

By MM. HUCHARD and LABADIE-LAGRAVE.

(*Archives Générales de Médecine*, July, 1870.)

"*Symptoms.*—The majority of patients most frequently present a bad general state of health; they are chloro-anæmic, and of a lymphatic or scrofulous temperament. Up to the time of the commencement of the bad symptoms, menstruation, which is established without trouble, is regular and normal, and fecundation is a possibility; then the menses become painful, sometimes irregular, and the patients generally direct the attention of their medical attendant to the expulsion during a catamenial period of certain bodies or membranous fragments which they generally designate as 'clots,' 'pieces of skin,' or 'pieces of flesh.'

"During the intercalary periods the pains most frequently are less intense, sometimes quite absent, and in all cases do not consist in more than a painful sensation of weight in the perineum and hypogastrium, which is exaggerated by walking and long-continued standing.

"The attack of menstrual congestion is announced some days beforehand by the increased intensity of the painful phenomena. The sensation of fulness in the pelvis is more marked, the pains gradually increase in severity, following the course of the lumbo-abdominal nerves, and propagating themselves to the anus, the bladder, the loins, and the region of the umbilicus, and sometimes radiating towards the inguinal canal, the ovarian regions and the thighs. Some authors have also noted painful swelling of the breasts. Blood soon appears, often escaping drop by drop, sometimes flowing in greater abundance so as to constitute a veritable menorrhagia. Then the pains become extremely violent, so as to leave no intermission or opportunity for rest either by night or day; on the second or fourth day of the catamenial period they take on the expulsive character, and finally terminate in the delivery of a complete or fragmentary membranous sac. Usually the bleeding is arrested after this expulsion, but it not unfrequently flows for one or two days; sometimes there may be observed even a menorrhagic attack consecutive to the detachment of the mucous membrane, but the pains rapidly disappear, the calm returns, and all becomes quiet during the intermenstrual period.

"The dysmenorrhœal membranes may be either complete or in fragments; in the latter case the pain will not cease before the expulsion of

all the fragments. These when collected together present a triangular form, under which will always be manifest the membranous body. The external surface is irregular, callous, and of a greyish red colour; the internal surface is moist, softened and white. It may happen, however, that these relations are changed, and that the dysmenorrhœal membrane presents an external smooth surface, and an internal spongy surface, in consequence of its introversion, similar to that which is produced in the uterus.

"The pains experienced by the patients are of two kinds: some occur during the intermenstrual period or at the approach of the menses. They are slight in the exfoliating membranous dysmenorrhœa, more acute in the pseudo-membranous dysmenorrhœa and testify to the presence of a sub-inflammatory state seated in the organs of the pelvis. *These are congestive or inflammatory pains.* The second are pains of expulsion characterized by veritable colicky attacks or uterine sensations similar to those of labour.

"If, at the time of the menses, the vagina be explored, one may frequently make out that the cervix uteri is engorged, sometimes painful, often opened up in order to permit the passage of a portion of the dysmenorrhœal membrane. After the cessation of the flow of blood there has been noticed in many cases the existence of a more less abundant leucorrhœal discharge, presenting a mucous, purulent or lochial character. Nearly always the uterine catarrh is a premonitory symptom of dysmenorrhœal accidents.

"With the speculum one may often make out the existence of erosions, bleeding granulations, and swelling of the two lips of the os uteri, especially of the posterior one. In many cases the cervico-uterine canal is contracted, and in consequence of the progress of the affection and the repetition of the symptoms, the uterus may fall into a condition of retroversion, affected as it is by the weight of the hypertrophied posterior wall. Then, in cases of this kind, the patient experiences in the menstrual interval continuous pains which may be relieved by temporary elevation of the organ by means of the finger introduced into the vagina.

"The uterine contraction in most instances follows the appearance of the membranous dysmenorrhœa, and we consider it to be always a serious complication, from the facts that it renders the expulsion of the dysmenorrhœal membrane more difficult and increases the severity of the painful phenomena. In cases of this kind the membranous dysmenorrhœa is complicated by a mechanical dysmenorrhœa which would have a greater tendency than the dysmenorrhœal membrane to produce retention of catamenial blood.

"On the other hand, retroversion may give rise to a blood stasis in the hæmorrhoidal veins, and thus favour in the pelvic organs the production of passive congestions which may have a serious retarding influence upon the dysmenorrhœic affection.

"Anteversion and latero-version have been observed but rarely, and occasionally also flexions of the uterus. There have been noted also all the symptoms of an intense congestion or of an inflammation of the ovaries.

"Finally, one fact upon which authors have not sufficiently insisted is that the exfoliating membranous dysmenorrhœa may at length give

rise to a croupal endometritis, and become complicated by a pseudo-membranous dysmenorrhœa. It is in this way that we believe we can explain the case reported by M. Siredey, of a patient in whom there had been noticed successively in the dysmenorrhœal membranes the characters and traces of inflammatory products. One even comprehends in this way that membranous expulsion may take place beyond the catamenial epoch in cases of dysmenorrhœa associated with diphtheritic inflammation of the uterine mucous membrane.

“*Diagnosis.*—The opinion which attributes all cases of membranous dysmenorrhœa, to so many ovular abortions, having been declared utterly false, it is necessary to establish differential signs between the dysmenorrhœal membrane and the remains of the ovular abortion.

“1. The expulsion of the dysmenorrhœal membrane is always produced at the time of the menses. It may be frequently repeated, sometimes even for years. Ovular abortion is produced independently of the menstrual epoch; it is not regularly repeated every month, and it comes on after a more or less prolonged retardation of the menses.

“2. Generally the dysmenorrhœal membrane is expelled in the form of shreds. When it is entire it represents a triangular membranous sac, offering three orifices; an inferior one corresponding to the cervical cavity of the uterus; and two superior openings which correspond to the ostia uterina.

“The mass formed by ovular abortion is, in most instances, expelled in the form of a complete ovoid sac. It is thicker than the menstrual mass, richer in vascular arborizations, and encloses in one of the folds of the hypertrophied mucous membrane a slightly thickened and swollen surface, umbilicated at its centre, which, when incised, shows the presence of an ovum with its chorionic villousities. Since the important works of M. Coste on embryogeny, the nature, form, and external aspect of this membrane cannot have escaped an attentive examination; and we think that it will be useful to describe summarily the diverse modifications produced during the first two months by fecundation upon the uterine mucous membrane. This, when examined on the twentieth or twenty-first day of pregnancy, presented to M. Coste the following characters:—

“The vessels of the mucous membrane were larger than in the normal condition, and some, more dilated than others, formed already the rudiment of the coronary sinus, limiting the reflected and parietal portion of the ovular mass. The part of the mucous membrane under which the ovum was concealed, presented the same vascular development, except in a small circular space, presenting the aspect of recently occluded umbilicus. The ovum had not yet contracted any adhesions. The deep wall of its containing sac was traversed by large sinuses, on the point of being transformed into lacunæ destined for the reception of the chorionic villousities.

“On the fourteenth day of pregnancy the mucous membrane is still thicker and more swollen. The small ovular tumour, soft and fluctuating, presents at its centre a space deprived of vessels and glands. The three portions of the aborted mass then present for consideration three important characters: the ovular or reflected portion, or epichorionic membrane, presents a cribriform aspect, which is observed evenly over

the whole of the parietal portion ; the intermediate or utero-epichorionic membrane is very uneven, anfractuous and with an areolar and erectile appearance, due to the presence of chorionic villousities, and to the communication of the anfractuositities with the venous sinuses which enclose the placental tufts.

"One sees by this comparative description of the menstrual and gravid abortive masses, that the first differs from the second only in the absence of a fecundated ovum. In both cases, but in a more advanced extent in pregnancy, the mucous membrane has undergone an hypertrophy of all its elements, an augmentation of its vascularity, a proliferation of its epithelial cells and a development, frequently very marked, of its glands.

"3. The anatomical structure is the same in the gravid and menstrual membranes. The former presents a greater thickness than the second. In ovular abortion one does not observe the presence of an inflammatory exudation which exists in the pseudo-membranous dysmenorrhœa.

"4. Towards the fourth month of pregnancy the gravid abortive mass, instead of cylindrical or prismatic epithelium, presents a pavement epithelium. In exfoliating membranous dysmenorrhœa the epithelium always preserves the characters of the uterine mucous membrane.

"We have thought it necessary to deal fully with the diagnosis which, according to us, has great importance ; many examples have been given of supposed membranous dysmenorrhœa, which were really cases of embryonic abortion. In short, that which particularly distinguishes membranous dysmenorrhœa from abortion, is the repetition of the symptoms during a time more or less prolonged at each menstrual period.

"When the membranous expulsion has been produced but once, it is easy to comprehend how, in presence of cases of this kind imperfectly observed, Raciborski has, in principle, regarded all dysmenorrhœal membranes as so many ovular aborted masses, and confounded in the same description membranous dysmenorrhœa and ovular abortion.

"From the cavity there may be expelled clots or concretions of mucus which reproduce the mould of the organ. As, in these cases, the cervico-uterine canal is often retracted, the rejection of these foreign bodies may give rise to very violent expulsive pains. The diagnosis will be rendered still more difficult by reason of the possible repetition of the symptoms which might be attributed to contraction of the neck. It is to these cases that one ought to refer the fibrinous polypi that have been described by different authors.

"In these cases the diagnosis will be easy, if one takes into account the macroscopical and microscopical characters of these membraniform products. These do not present the spongy or villous appearance of which we have spoken, are not folded so as to form a smooth and polished cavity, and do not present the three orifices which may be observed in dysmenorrhœal membrane. Let us add that these polypoid secretions are not regularly reproduced at every menstrual epoch, and that an histological examination, instead of giving the ordinary reactions of acetic acid upon fibrine, exposes no elements of the uterine mucous membrane, nor any traces of inflammatory exudation. Moreover,

according to Virchow, these polypoid tumours, which he designates by the name of polypous hæmatomata of the uterus, are associated with abundant metrorrhagia, and the section of these fibrinous masses shows a dense white external layer analogous to a membrane, whilst at its inner may be found disposed, layer after layer, masses of a deep brown colour and sanguinolent appearance, which are often distinctly stratified.

“Finally, there exists a variety of vaginitis which accompanies total or partial stripping off of the vaginal mucous membranes. This is the so-called epithelial vaginitis of Dr. Tyler Smith. In most instances the thickness of the vaginal membrane is less than that of the uterine membrane. The former presents but two openings, one above, the other below, and does not present the two slits, which in the latter corresponded to the ostia uterina. The expulsion of these membranes takes place in shreds, it is not associated with menstruation, and a microscopical examination of the expelled portions enables one to recognise the elements of the mucous membrane of the vagina which is furnished with pavement epithelium.”

ART. 258.—*Principles of Treatment at the Change of Life.*

By EDWARD JOHN TILT, M.D.

(*Change of Life*, 3rd edition, London, pp. 296.)

In all cases the main indications are: 1, To cure local disease; 2, To restrain abnormal discharges; 3, To correct inordinate or irregular nervous action; 4, To strengthen the patient's constitution. The two following cases will, to a certain extent, exemplify the discrimination required to treat patients suffering under similar symptoms:—

CASE 10.—In 1844, the rage for bleeding, again developed in France by the passionate advocacy of Broussais, had subsided in Paris; but it was still possible to test the ill-effects of this pernicious system. About that time Dr. Tilt was consulted by a lady, aged fifty-one, tall, thin, with a pallid complexion, dark hair and eyes. She at first menstruated at fifteen, the function had never been interrupted except by three pregnancies; it subsided gradually, and cessation occurred at the age of forty-eight. For some months she felt no inconvenience, but afterwards she was much troubled by headache, giddiness, flushes, and perspirations. An eminent French physician ordered her to be bled to ten ounces; a slight improvement followed, but the same symptoms soon returned, which were again interpreted as signs of plethora, and another ten ounces were taken from the arm. This second bleeding made the patient worse; and when Dr. Tilt saw her, the marked ill-effects of the treatment were evident, so he gave anodynes, mild purgatives, wine, and a more strengthening diet. The patient rapidly improved, and in subsequent relapses derived benefit from the same kind of treatment.

CASE 11.—Dr. Tilt was consulted by a lady, aged fifty-three, of middle stature, sanguine complexion, brown hair, and hazel eyes. She menstruated abundantly for the first time in her thirteenth year, and she had since been regular, the discharge being usually abundant. While the function was ceasing, she was twice seized with flooding, and was much better for it.

Menstruation ceased at fifty-one, and was soon followed by diarrhœa, which came on at irregular intervals, but did not interfere with appetite and strength. When the supplementary discharge subsided, heaviness of the head, with giddiness, came on, together with flushes of heat and drenching perspirations. For these distressing symptoms, she had consulted several medical men and had taken quinine, acetate of lead, and gallic acid, but without benefit. Dr. Tilt ordered her to be bled to twelve ounces, and the vertigo, flushes, and perspirations abated considerably. The bowels were kept open by Seidlitz powders; several glasses of effervescing lemonade were taken in the course of the day, and a tepid bath, for an hour, every week. Meat once a day, no beer nor porter, one glass of sherry at dinner, and increased exercise in the open air. In a month all the painful symptoms had disappeared, and the patient remained well for several subsequent months, when, without any apparent cause, the same symptoms broke out again. Dr. Tilt ordered six ounces of blood to be withdrawn, and prescribed the former treatment, with similar good effect.

The symptoms experienced by both these patients were similar, but their constitutions were very different. The first shows that, when nervous people are bled to excess, there arises a state which often closely resembles the threatenings of disease in the vital organs, relieved in other temperaments by bleeding. In the last case the patient was of a strong constitution, accustomed to lose considerable quantities of blood, and relieved by the occurrence. The vigour of the circulation was well proved by the strong impulse of both heart and pulse, instead of the flaccid condition of both in the first patient. The one was relieved by sedatives, and a strengthening diet, the other principally by bleeding; and Dr. Tilt has seen bleeding remove these symptoms when it was not indicated by a strong constitution, but by the previously contracted habit of losing a considerable quantity of blood, as in women of a slender make and slight, delicate appearance, and in those whose nervous susceptibility is great, in whom we must admit a tendency to hæmorrhage. At first sufficient blood should be taken away from a plethoric woman to make a decided impression on the system, for nature frequently adopts this plan, insomuch that 138 women out of 400 were flooded at the change of life; but when the indication to bleed recurs, it is better to bleed in progressively smaller quantities, and at progressively longer intervals. Lissot mentions a case in which he thought right to bleed for three years, after which the patient recovered her health. Oufeland used to bleed three times in the first year, and once in the third. Dr. Tilt sometimes follows a somewhat similar plan, which is a daguerreotype of a natural process, for in 171 women out of 500 the menstrual flow ceased naturally, that is, by a gradually smaller amount of discharge occurring irregularly every two, three, four, five, or six months. In 53 cases out of every 500 there was a marked return of monthly phenomena after cessation. In such cases it would be judicious to bleed before the accustomed monthly occurrence. The effects of the bleeding should be aided by judicious regimen; for, doubtless, the necessity for bleeding, even plethoric women, would be considerably diminished if it were not so difficult to persuade them to break through accustomed habits, and if they would consent, for a time, to diminish the quantity of their food, and refrain from what may be otherwise prejudicial in their mode of life.

ART. 259.—*Uterine Hydatids supposed to be the Change of Life.*

By EDWARD JOHN TILT, M.D.

(*Change of Life*, 3rd edition, London, pp. 296.)

In his treatise on *The Change of Life in Health and Disease*, Dr. Tilt gives the following case, which, he says, puzzled him exceedingly:—

Anne H., a tall, delicate-looking woman, with light hair and blue eyes, was thirty-nine when she first consulted me at the Paddington Dispensary, 17th June, 1850. The menstrual flow first appeared at fifteen, with great pain. She married at twenty, had six children, and was regular up to the last year, since which time the flow came at two, three, five, or eight weeks' interval, with greater pain, and with nervous fits, in which, though conscious, she would remain from six to eight hours in a powerless and speechless state. On examination, I found nothing the matter with the womb, so I imagined the change of life was approaching, and treated her accordingly, but without affording much relief. The menstrual flow stopped for three months, up to which period nothing had caused me to alter my diagnosis; but in December flooding came on, and I have seldom witnessed greater sufferings than she endured for a year, flooding frequently occurring with intense abdominal pains and hysterical fits. The womb was patulous, but not ulcerated, and its body was not much enlarged. I gave opium and ergot of rye in repeated doses for a long time with decided benefit, for on 10th May, 1851, the menstrual flow appeared at the proper time, and without much pain. The abdomen was much swollen. After walking home on June 23rd, dreadful forcing pains brought away from the vagina about a pint of sticky, rose-coloured matter, without smell. This was followed by a sanguineous discharge, lasting for several days. A digital examination was very painful, but I ascertained that the body of the womb was anteverted, much enlarged, and so high that it was difficult to reach the os uteri. I gave opium enemata, which relieved the pains; alum injections were used, but when they stopped the flow, the pains returned, which were only relieved by flooding. To obtain parish relief it became necessary that the patient should be attended by Mr. Howlett; but I learned that, after very violent pain, half a pint of glutinous liquid was again passed from the vagina on 5th July, after which she continued to lose blood. It sometimes dribbled, at others, came as a flooding. When the uterine discharge stopped for two or three days, the pains became excruciating, notwithstanding the exhibition of sedatives inwardly and outwardly; and this state of things continued until I was sent for to see the patient on 6th December, when, after labour pains, she brought away a large mass of hydatids, which well explained the frequent floodings and the patient's protracted sufferings. Ergot of rye induced bearing-down pains, and brought away dark, offensively-smelling blood. Opium relieved the sufferings; the patient recovered, and had another child a year after.

Uterine hydatids is a rare disease, generally occurring earlier in life, and its diagnosis is often very obscure. The enlarged womb, the continued flooding without ulceration of its neck, alternated with the limpid and rose-coloured glutinous discharge—the best sign of uterine hydatids—was absent in the early part of this case. The diagnosis of uterine hydatids being clearly established, it would have been better to have dilated the cervix, and to have brought on the expulsion of the hydatids, and to thereby save the patient six months' suffering.

ART. 260—*Styptic Colloid in Ulceration of the Os Uteri.*

By Dr. WYNNE, of Guatemala.

(Obstetrical Transactions, London, vol. xi.)

Dr. Wynne reports the case of a lady who had suffered from induration and ulceration of the cervix for nearly seven years, in which, after the usual remedies had failed, the application of *Dr. Richardson's Styptic Colloid* had the effect of healing the ulcer, and sensibly diminishing the induration of the surrounding tissues in less than a month. In several other cases of ulceration of the os uteri he found that a cure was effected by the styptic colloid, with greater facility and in about one half the time usually required by other modes of treatment.

ART. 261.—*On Uterine Pathology at the Change of Life and after the Menopause.**

By E. J. TILT, M.D.

(Medical Times and Gazette, August 20.)

Dr. Tilt was able to confirm the general belief that the change of life is a perilous period for those women who enter it in a state of disease; particularly if they be suffering from any uterine affection. Not only are uterine affections then made worse, but they prolong the change and retard cessation. Dr. Tilt also confirmed the belief in the powerful help that the menopause brought in aid to medicine to enable us to cure cases of intractable chronic uterine inflammation and to prevent uterine displacements being any longer a fruitful source of painful symptoms, although the displacements still continued to be almost as great as before the menopause. After reminding his hearers that heteromorphous growths became unusually frequent after cessation, Dr. Tilt sketched the influence of the menopause on those forms of uterine disease which had previously been so frequent: irritation, congestion, inflammation, and ulceration of the womb. He passed in review the diseases that had come under his observation, in the order of their greatest frequency, and gave chronicity as their chief characteristic.

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association at Newcastle-upon-Tyne, August.

ART. 262.—*A Case of Coccyodynia.*

By W. R. Fox, M.D.

(Chicago Medical Examiner; and The Medical Record, July 1.)

Dr. Fox reports the case of a lady who complained of a very severe pain in the region of the coccyx. She had been delivered of her first child after a tedious labour, and her recovery was also tedious. The coccygeal pain was very much aggravated by sitting, walking, or rising from the sitting posture. Examination revealed the lower joint of the coccyx to be motionless and tender to the touch. Pelvic organs healthy, except slight prolapsus uteri. Advising amputation of the coccyx, she consented to the operation. The two lower bones were separated from their attachments and severed at their second joint by small bone forceps. The result was perfectly satisfactory.

ART. 263.—*Indian Hemp in Menorrhagia and Dysmenorrhœa.*By ALEXANDER SILVER, M.A., M.D., Assistant Physician
to Charing-cross Hospital, &c.*(Medical Times and Gazette, July 16.)*

Dr. Silver brings several cases before the profession, not because the discovery of the value of Indian hemp in these troublesome maladies is new, but rather because it is not sufficiently well known. The cases show that we may rely on the drug for arresting sanguineous uterine discharges from whatever cause; they also show that it may be employed to facilitate uterine examinations which might be otherwise objectionable. The dose Dr. Pavy ordinarily prescribes is twenty minims of the tincture. It is best given in combination with aromatic spirit of ammonia.

ART. 264.—*On a New Instrument for Securing the Pedicle in the Operation of Ovariectomy.**

By GRAILY HEWITT, M.D., F.R.C.P.

(The Lancet, August 13.)

Adopting the conclusion that the best method of treating the pedicle in ovariectomy is to bring it to the surface of the wound, the author suggests a new method of securing it in that position. A framework of steel, shaped somewhat like a shoe-buckle, measuring two inches and a half by one and three-quarters, the steel band being two-eighths of an inch wide, and one-eighth of an inch thick, is provided with studs, eight in number, fixed on the framework. These studs project three-

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association at Newcastle-upon-Tyne, August, 1870.

eighths of an inch. The pedicle is to be tied in two or three segments, according to its size, by double twine ligatures, and the ends fixed to the studs of the framework, the ligature acting much as the tongue of a buckle. Thus the pedicle can be easily maintained at the surface of the wound, easily treated, and the treating materially expedited.

ART. 265.—*New Operation of Embryotomy by the Wire-Écraseur.**

By ROBERT BARNES, M.D.

(*British Medical Journal*, October 1.)

Dr. Barnes demonstrated his new operation of embryotomy by the wire-écraseur, using a rachitic pelvis measuring about two inches in conjugate diameter, and an ordinary-sized foetus. The head being perforated, he twisted off a portion of the parietal bones by his craniotomy forceps, the object of which proceeding is to destroy the arch of the cranium and the sphericity of the head. This makes the throwing the loop of the wire over the head more easy, and obviates its riding off when the screw is worked. It was seen that the wire-loop could be passed through the smallest chink, and, when it had seized the head either over the lower jaw or occiput, that it was instantly buried in the skull when the screw was worked. In this lay one great superiority over all other methods of embryotomy, there being no contusion of the mother's structures, all force being expended upon the foetal head. The wire went through the base of the skull without difficulty, making a clean bisection of it. The free section being taken away by the craniotomy forceps, the portion remaining attached to the spine was then seized by the craniotomy forceps and extracted without the least resistance. Dr. Barnes said it would be quite as easy to operate on a pelvis much smaller, and, if necessary, to make two or more sections of the head. The extraction of the shoulders and trunk was effected by taking off each arm at the shoulder by hook or scissors, cutting through the ribs with scissors, so as to make the trunk collapse, and then extracting by craniotomy forceps. The whole operation was completed in less than half an hour. Dr. Barnes expressed his conviction that, provided there were room at the outlet of the cavity of the pelvis to allow of manipulation, there was hardly any degree of contraction at the brim that would baffle this operation.

ART. 266.—*On Air in the Vagina.*

By Dr. RASCH.

(*Medical Times and Gazette*, October 1.)

At a meeting of the Obstetrical Society of London, held 6th July, Dr. Rasch read a paper "On Air in the Vagina," and arrived at the

* Abstract of a paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-upon-Tyne, August, 1870.

following conclusions :—1. No air enters the vagina of a female placed on her back. 2. In the prone position the abdominal walls and the contents of the abdomen fall outwards, and cause a diminished pressure in that cavity. If the vaginal orifice be open, air will enter, and so compress the expanded intestinal gases to their previous volume. 3. The force with which it enters, and consequently the quantity which distends the vagina, varies with the resistance offered by the abdominal walls to the gravitation and the degree of mobility of the viscera. 4. In replacing the female on her back, the abdominal walls and contents fall inwards, and expel the air again from the vagina. 5. Air will not enter the uterus unless distended by foetus, hand, instruments. 6. In the position on the back we have an efficient means of keeping the air out of the vagina and uterus, and so preventing the deleterious consequences ascribed to its action on the vaginal and uterine contents. 7. In abscesses communicating with the upper part of the vagina this will be of equal importance.

Dr. Hicks could not entirely assent to the first proposition. If the uterus be prolapsed, and the patient laid down, the uterus receded a certain distance upwards; if so, then, the vulva being open, air could enter.

Dr. Routh said the causes specified by the author were in action in all women. Why, then, was the disease so rare? A reversed vermicular action of certain mucous membranes was admitted. Why should it not occur in the vagina? The kinometer showed vaginal inspiration and expulsion of fluid or gas in every woman. He had found this rare disease mostly in women of sedentary habits, not in those who presented the conditions most favourable to suction of air upwards into the vagina, such as cooks, and charwomen used to the stooping posture in scrubbing floors.

Dr. Gervis said that Dr. Routh had overlooked the condition laid down as essential—viz., that in addition to the force of gravitation acting upon the abdominal viscera in the semi-prone position, the vaginal inlet must be open, and in stooping this condition was not necessarily fulfilled. He advocated the position on the back in post-partum hæmorrhage.

Dr. Heywood Smith referred to the rarity of the condition described by Dr. Rasch. Its presence is more frequent in cases where the upper part of the vagina has been rendered abnormal by any cicatrices, by any version of the uterus, or shortening of the cervix uteri.

ART. 267.—*On a Form of Functional Hemiplegia seen in Child-bearing Women.**

By CLIFFORD ALLBUTT, M.D.

(*The Lancet*, August 13.)

It presents so uniform a clinical group of symptoms, it is so alarming to the patient and her friends, and is nevertheless so certainly curable

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-upon-Tyne, August, 1870.

by appropriate means, that Dr. Allbutt urged the recognition of the affection in our text-books. The affection is nearly always seen on the left side; there is a sense of weight and "numbness" especially affecting the arm, and there is often neuralgia, which is apparently associated with the infra-mammary neuralgia of such persons. The bowels are always disordered, generally confined, and the appetite and digestion are depressed. Dr. Allbutt related several cases of this disorder; in one of them a high authority had diagnosed central nervous disease, but it was nevertheless quite cured. He entered into the difficult question of the pathology of the cases, and also into the question of cure, which required much care and discrimination, but is mainly tonic in character.

ART. 268.—*A Case of Absence of the Vagina.*

By Dr. PALLÉN.

(*St. Louis Medical and Surgical Journal*, 1870.)

Dr. Pallén relates a case of absence of the vagina in which three operations ended in the establishment of menstruation. A girl, aged twenty, had since fourteen experienced menstrual molimina, without any show of menses. Her health failed her. On examination it was at first thought there was retention of the menstrual fluid from imperforate hymen. But it was found that there was no vagina, a small undeveloped uterus, and no accumulation. An artificial vagina was made by incision and laceration by the fingers, and maintained by wearing a glass plug and Barnes's dilators. A periodical flow of blood was established, and good health was regained. The case, Dr. Pallén says, is unique, the recorded cases of absence of vagina differing in some respects.

ART. 269.—*Lardaceous Disease of the Kidney Consequent on Abscess of the Ovary.*

By WILLIAM H. DICKINSON, M.D., F.R.C.P.

(*Pathological Transactions*, 1869.)

Dr. Dickinson relates the following case of disease of kidney associated with ovarian abscess:—

A young woman who died in St. George's Hospital had an abscess in the neighbourhood of the uterus. Shortly after labour profuse discharge of pus took place by vagina, the legs became œdematous and dropsy extended, hectic set in, the lungs became affected, frequent vomiting, urine lithatic and highly albuminous. She died at end of seven months. The right lung was hepatized, recent vegetations upon the mitral valve, kidneys enlarged, Malpighian bodies enlarged, and giving with iodine "amyloid" reaction. One ovary excavated by several abscesses.

ART. 270.—*On the Determination of the Length of the Pedicle in Ovarian Disease.*

By M. TIXIER, of Strasbourg.

(*Le Pedicule et son traitement après l'Operation de l'Ovariectomie*, Strasbourg, 1869; *Archives Générales de Médecine*, Juillet, 1870.)

“Practice and observation have enabled us to diagnose, in certain cases, the probable length and variety of the pedicle. Certain objective and subjective signs may guide the practitioner and facilitate his diagnosis; a very important matter, since on the length of the pedicle often depends the success of the operation.

“We have hitherto been able to diagnose with almost perfect certainty three varieties: the long, short, and twisted pedicle.

“*The long pedicle.*—The form of the abdomen has a peculiar aspect: this is the form *en besace*. The hypogastric portion of the abdominal wall is applied to the internal surfaces of the thighs, and the ovarian tumour, forcibly projected forwards, seems to be removed from the superior entrance of the pelvis. A vaginal examination reveals an elevation of the cervix uteri, and the index finger passed into the pelvic excavation does not meet with the tumour at any point. The womb is very moveable and can be readily displaced. The collection of these symptoms induces one to presume that there is an elongated condition of the broad ligament and of the Fallopian tube, a condition favourable for forcing the pedicle without the abdominal wound.

“*The short pedicle.*—The existence of a short pedicle may be assumed in the presence of the following symptoms: in the first place, the form of the abdomen differs from that described above; one may observe a lateral extension without pronounced prominence of the median portion. In attempting to introduce the tip of the finger between the tumour and the pubes, one feels through the skin that the growth passes into the pelvic excavation; its base seems to be seated over the pelvic opening. The vaginal touch denotes a sinking of the cervix uteri, and a more or less pronounced immobility of the womb. If the pelvic excavation be then explored with the finger, one feels that it is not free, and that certain parts of the tumour are contained within it. In the presence of these facts the surgeon may assume that there is a greater or less degree of shortening of the pedicle.

“*The twisted pedicle.*—At first sight this torsion seems difficult to determine. It may, however, under certain conditions be diagnosed with greater certainty than the two preceding varieties. Its existence may be concluded whenever the following symptoms have been observed:—

“The patient experiences at intervals very acute pains radiating downwards along to the vein corresponding to the affected ovary, and upwards to the lumbar region on the same side. These pains are excited by work and fatigue. They break out also when the patient is in bed, and when she wishes to change her position. One hears also from these patients of very strong uterine cramps analogous to those occasioned by deligation of the pedicle. The cystic fluid is more or less deep in colour,

presenting a hæmorrhagic appearance. The touch in these cases gives no precise indication. One can only acquire the idea of the existence of an habitually long and thin pedicle in cases of this kind.

ART. 271.—*On Peri-uterine or Pelvic Hæmatocele.*

By Dr. F. KUCHENMEISTER, of Dresden.

(*Vierteljahrschrift für die praktische Heilkunde*, Prag. xxvii., 2, 1870 ;
Schmidt's Jahrbücher, No. 8, 1870.)

Dr. Küchenmeister comprehends under the term hæmatocele effusions of blood into the abdomino-pelvic cavity, which have proceeded from some vessel belonging to the generative organ, and become encapsuled. There are primary hæmatocèles which may be intra- or extra-peritoneal: when one kind arises from the other, the hæmatocele is called mixed or secondary. The following is the author's further classification of these affections:—

A. Hæmatocèles whose source is to be found in the ovaries.

I. *Intra-peritoneal and peri-uterine hæmatocèles proceeding from the blood-vessels of the ovary.*

(1.) Those which are formed during the period of menstruation.

(a) When from any cause, as from concussion due to violent coitus, a blow or a fall, straining of a Fallopian tube takes place, or when spontaneous contraction or retraction, as from chilling during the menstrual period, the fimbriated extremity of the tube, which, during the whole period of the menstrual flow surrounds the ruptured Graafian vesicle, suddenly undergoes spontaneous separation from this, or is mechanically torn away. As a result of this, the blood too profusely poured out by the ruptured follicular vessels cannot wholly be taken up at once and conveyed by the Fallopian tube, but overflows and causes a separation of the fimbriated extremity of the tube from the ovary. The blood then finds an open passage into the peritoneal cavity;

(b) Or when from any cause, as from small fibroid bodies in the tubal canal, atresia of the canal, or plugging with fibrinous clot, the blood proceeding from the Graafian follicle finds its way to the uterus closed, and in consequence of this, flows backwards through the fimbriated extremities.

(2.) Hæmatocèles which originate not necessarily during the period of menstruation, but even during an interval. Embolism and rupture of the vessels of the ovarian plexus. Apoplexy of the ovary, and subsequent rupture.

(3.) Hæmatocèles which arise from an effusion of blood (apoplexy) following the conversion of a Graafian vesicle into a cyst.

II. *Primary extra-peritoneal hæmatocèles, in which the blood poured out from the ovarian vessels passes not into the peritoneal cavity, but into parts lying under the peritoneum.*

(1.) If the connexions between the ovary and the layer of peritoneum covering this body be relaxed, the hæmorrhage may detach the broad uterine ligament from the ovary without causing rupture.

(2.) Rupture of varices in the lower part of the plexus may give

rise to bleeding, by which the peritoneal coat is pressed partly upwards, partly through the adjacent hilus in this membrane.

B. Hæmatoceles which have their origin in the broad ligaments.

C. Hæmatoceles arising from a vessel of the uterus itself.

(1.) From the uterine plexus.

(2.) From the mucous membrane of the uterus, the blood flowing backwards through the Fallopian tubes. Besides the obstruction caused by imperforate hymen, the neck of the uterus may be closed by plugs of mucus; flexions and changes in the position of the uterus often obstruct the normal outflow of blood. An aspiration of blood in consequence of pressure of air is an improbable occurrence.

(3.) Bleeding into the parenchyma of the uterus; the muscular hæmatoma of M'Clintock.

D. Hæmatoceles originating in the blood-vessels of the Fallopian tubes, or in consequence of some anomaly of these structures.

A temporary plugging of a Fallopian tube may occur at two spots, between which spots blood may be poured out into the canal of the tube and cause rupture. But not artificial rents only, but also natural, congenital and permanent openings in a Fallopian tube may render possible a passage of blood into the abdominal cavity: these openings being the so-called accessory orifices of the Fallopian tubes.

Hæmatoceles occurring during pregnancy or the lying-in arise, according to Dr. Kuchenmeister, in consequence of a backward hæmorrhage through the tubes dependent upon the insertion of the placenta in the immediate neighbourhood of or round about the mouth of the tube, and upon apoplexy or bleeding from the placenta occurring near this orifice. In cases of this kind one must conceive that blood is poured out between the uterus and the surface of the placenta, applied to the uterine wall and then forced by the counter-pressure of the placenta in the tubal opening, this being the spot which presents the least resistance. If the placenta be seated over or around the Fallopian tube, the uterine orifice will be widened with the extension of the uterus itself, and consequently favour the flow of blood from the uterine cavity into the tube.

Hæmatoceles occurring during the lying-in result either from constitutional infection, or from ovarian and tubal menstruation taking place at a period when the canal of the Fallopian tube is not yet, in consequence of puerperal salpingitis, perfectly free and patent.

To hæmatoceles originating in tubal hæmorrhages belong those which take place from the pedicle after the operation of ovariectomy.

Blood may also be passed into the tubes with the normal products of secretion, in consequence of its inferior exit from the uterus being obstructed: hæmatometria, closing of the cervix uteri by that which is probably the cause of hæmatocele taking place after the expulsion of the fœtus of an ovum which has not attained full maturity.

Hæmatocele may arise also in consequence of either permanent or temporary occlusion of the uterine or abdominal extremities of the Fallopian tubes. Likewise, the tubal menstrual fluid may be retained and accumulated in the canal, when this is occluded at two remote spots by any permanent or temporary obstruction.

E. As further sources of hæmatocele are to be considered certain rare and secondary pathological processes.

1. Exceptional ruptures with extra-uterine pregnancy.
2. Ruptures of hæmorrhoidal veins.
3. Hæmorrhage from other vessels lying between the peritoneum and the uterus, chiefly those which have undergone varicose changes.
4. Cachectic-hæmatocele occurring with the hæmorrhagic diathesis (Trousseau).

Concerning the greater frequency of extra or intra-peritoneal hæmatoceles, Dr. Kuchenmeister holds that it is a very erroneous course to consider hæmatoceles ending in recovery to be due to other anatomico-pathological conditions than those which terminate in death. Intra-peritoneal hæmatocele is the general rule, extra-peritoneal hæmatocele the exception.

Dr. Kuchenmeister confesses that in the absence of any indication of the sanguineous nature of a retro-uterine tumour, the diagnosis of hæmatocele can be but a probable one. With the differential diagnosis it is otherwise. As a basis for the diagnosis of pelvi-peritonitis, Dr. Kuchenmeister alludes to the absence of a constitutional disposition to hæmorrhage as with hæmatocele, and the absence of the symptom of sudden suppression of the menses.

ART. 272.—*Treatment of Irritable Uterus.*

By HUGH L. HODGE, M.D., Emeritus Professor of Obstetrics and Diseases of Women and Children in the University of Pennsylvania.

(*Diseases Peculiar to Women*, pp. 531. Philadelphia.)

In his work on *Diseases Peculiar to Women* Dr. Hodge suggests the following treatment:—"1st. In all cases of acute inflammation perfect rest in bed, with appropriate antiphlogistic remedies, should be exclusively relied upon. 2nd. In chronic inflammation, with nervous neuralgic and spasmodic symptoms, while constant attention should be paid to the phlogosis, the main business of the practitioner has respect to the nervous irritation. This usually has a distinct origin, and is thus far independent of the inflammation. The latter may be, and often is, an aggravating, but not the essential cause. It may be removed, and the nervous irritation will continue in all its intensity. 3rd. The persistence in the antiphlogistic treatment, especially by heroic remedies, powerful, stimulating, and caustic revulsives, is founded on a wrong principle, and is calculated to increase rather than to diminish the morbid irritability of the tissues. 4th. By a careful attention to the various predisposing and exciting causes of inflammation, and by mild and soothing measures, more will be accomplished than by a resort to powerful and destructive escharotics. 5th. Hypertrophied and indurated enlargements of the uterus are usually injurious merely from their size and weight. Hence patients at rest are often perfectly comfortable, but in motion become tormented by the symptoms of displaced and irritable uterus. 6th. And therefore suitable pessaries, not caustics, are generally the proper means for palliation, and even for radical recovery."

ART. 273.—*On the Connexion between Inflammatory Conditions of the Uterus and its Displacements.**

By HENRY BENNET, M.D.

(*The Lancet*, August 13.)

The purport of this paper will be best given in the recapitulation by which the author concludes it: "1. I consider that, under the influence of mechanical doctrines pushed to an extreme, uterine displacements are by many too much studied *per se*, independently of the inflammatory lesions that complicate and often occasion them. 2. That the examinations made to ascertain the existence of inflammatory complications are often not made with sufficient care and minuteness, as evidenced by the fact that I constantly see in practice cases in which inflammatory lesions have been entirely neglected, and the secondary displacements alone treated. 3. That inflammatory lesions are often the principal cause of the uterine displacements through the enlargement and increased weight of the uterus, or of a portion of its tissues, which they occasion. 4. That when such inflammatory conditions exist, as a rule they should be treated and cured, and then time given to nature to absorb morbid enlargements before mechanical means of treatment are resorted to."

ART. 274.—*On Strangulation of the Uterus.**

By GRAILY HEWITT, M.D., F.R.C.P.

(*British Medical Journal*, October 1.)

"Strangulation of the uterus" is that condition of the organ in which the circulation is mechanically and forcibly interfered with, the result being acute congestion of the body of the uterus and various secondary effects. This strangulation is present when the uterus is forcibly bent upon itself, most markedly when it is bent backwards. It is a marked feature in most cases of flexion; and it is acute or chronic according to circumstances. It occurs as a necessary result of acute flexion, the arteries, but more particularly the veins, being partially occluded by the bending of the uterus. The acute pain and tenderness of the body of the uterus in such cases are due to it. The nerves are also pressed upon at the seat of the flexion. It was the opinion of the author that this strangulation of the uterus is a principal pathological element in all cases where hysterical convulsive attacks are observed; the acute congestion of the uterus determining directly, as well as indirectly, the occurrence of the convulsive seizures. Strangulation of the uterus and chronic inflammation of the uterus are intimately related and mutually co-operative in giving rise to the various sufferings present in many cases of uterine disease.

* Abstract of a Paper read at the Thirty-Eighth Annual Meeting of the British Medical Association, at Newcastle-upon-Tyne, August, 1870.

ART. 275.—*On Acute Inversion of the Uterus.*

By THOMAS MORE MADDEN, M.R.I.A., Senior Assistant Physician to the Rotunda Lying-in Hospital, Dublin.

(*Dublin Quarterly Journal*, November.)

The mode of effecting the reduction of the displaced uterus, though the subject of much controversy in some of the standard works on the question, when freed from the unnecessary circumlocution in which the subject has, Dr. Madden thinks, been involved, is in reality simple enough. The placenta, if adherent, having been first gently, but as quickly as possible, peeled off, the displaced uterus is to be grasped in the operator's right hand, and pushed firmly into the vagina, the cervix being first returned. No attempt should of course be made to reinvert the uterus until fairly within the vagina, as otherwise a double inversion would be the result. But, when the uterus has been passed as high up in the vagina as possible, steady pressure should be made with the pulp of the three fingers within the vagina on the fundus, which should thus be pressed through the cervix, great care being taken that the pressure should not exceed the resisting power of the uterine wall, or else a fatal laceration of the fundus might be very easily produced: in this way the fundus should be insinuated back through the cervix; when pressure with the knuckles may be substituted for the fingers, and continued until, as generally happens, the uterus will be found to spring out of itself upwards and forwards "like a bottle of india-rubber when turned inside out," as has been aptly observed, and the womb resumes its normal condition. The operator's hand should now be left in the uterus until, as in my case, the organ is found to contract strongly on it, when it may be withdrawn, and the case treated on those general principles applicable to all cases in which a great shock and much hæmorrhage has been sustained by a parturient woman. If the inverted uterus cannot be replaced after all our efforts have been pushed as far as possible compatibly with the safety of the patient, the uterus should be at least pushed up within the vagina; hæmorrhage should be restrained by astringent applications; inflammation should be met by appropriate treatment; the patient's strength supported; the state of the bladder carefully attended to; and all pressure taken off the part as far as possible by properly adjusted bandages or pessaries, as the case may be.

ART. 276.—*The Histories of Four Cases of Chronic Inversion of the Uterus.*

By THOMAS GAILLARD THOMAS, M.D.

(*Richmond and Louisville Medical Journal*, April; and *Brit. and Foreign Medico-Chir. Review*, July.)

Dr. T. G. Thomas gives the histories of four cases of chronic inversion of the uterus, and describes a bold course of treatment. He quotes first

a case by Dr. Emmet. The uterus had been inverted about six months; there was great anæmia and hectic. Under ether attempt at forcible taxis by pressure on the fundus was made without much effect. Then Dr. Emmet allowed the fundus to drop into the palm of his hand, and passing the thumb and fingers round the mass as high as possible within the cervix, he continued to enlarge the space within the neck and inverted body by rapidly expanding the fingers as much as possible, at the same time making steady upward pressure, with a view of returning first the portion last inverted. This manœuvre, aided by endeavouring to roll out the inverted portion by the other hand on the abdomen, was successful in effecting considerable dilatation of the cervix and partial return of the uterus. After three hours and fifty minutes of this manipulation, in which Drs. Emmet, Labine, Elliot, and Thomas relieved each other, the uterus was completely returned. She recovered and became pregnant.

CASE 2.—Inversion of four years standing.—After two unsuccessful attempts at forcible taxis, a Barnes' dilator was placed in the vagina for some hours. This was found to have supported the uterus well. Attempts were then renewed, trying Dr. Noeggerath's plan of pushing in one corner; considerable hæmorrhage compelled us to desist. Next day efforts on the plan described in the preceding case were sustained during nearly three hours, when the uterus was reduced. The woman recovered. During this proceeding Dr. Thomas held a plug of boxwood, with a handle a foot long, forcibly in the cervical ring through the abdominal walls. He believed this mode of exciting counter-pressure is more effectual than by the fingers in supporting the uterus and in dilating the cervix.

CASE 3.—Inversion of ten months.—Dr. Thomas began by putting the patient on the free use of belladonna in the rectum. Under ether he grasped the tumour so that the fingers surrounded the pedicle; he then pushed the mass steadily upwards against the abdominal wall, where it met the counter-pressure of his left hand. In exactly ten minutes the entire cervix yielded, and the body went up; then seizing the body with the thumb on one horn, the index finger passing the other, the horn pressed by the thumb became indented soon, the other horn followed, and in just twenty minutes the operation was completed.

CASE 4.—Inversion of twenty-one months.—Several attempts at reduction by forcible taxis and by wearing a vaginal air-pressary had failed. Dr. Thomas resorted to the belladonna and douche, as in case 3, for a week; but an hour's persistence in the methods narrated, aided by the abdominal plug, resulted in only partially expanding the cervix. A caoutchouc bag was then placed in the vagina, and attempts renewed next day with no better success. Next the uterus was drawn down, and an incision was made in the tissue of the neck towards the subjacent peritoneum. A free jet of blood followed; many attempts were made to tie the vessel, but failed; the bleeding was at last stopped by stitching the lips of the wound together. A week later the following remarkable proceeding was carried out: The uterus was lifted up so that the operator could feel the cervical ring against the abdominal wall. He then cut down in the median line, as for an exploratory incision in ovariectomy; then he inserted his finger into the uterine sac, and found there was no adhesion. He then inserted a short dilator,

made on the principle of a glove-stretcher, into the cervix and expanded the blades. "The dilation was easy and rapid," but the contraction returned as soon as the dilator was withdrawn. The uterus was drawn down and one horn pushed in, then the other, and the organ was reduced. The vessel which had bled so profusely a week before, burst out again. This was however stopped. A finger passed through between the uterus and bladder. The abdominal wound was closed by silver sutures; the vaginal tent was not interfered with. The patient quite recovered.

ART. 277.—*On Intra-Uterine Medication.*

By J. C. NOTT, M.D.

(*The Medical Record*, June 15.)

At a meeting of the Medical Society of the County of New York, held April 18, 1870, Dr. J. C. Nott read a paper upon this subject, from notes of which we give a full abstract.

After a brief *resumé* of the leading points of an article which he had published in the *Journal of Obstetrics* (Nov. 1869), upon the various indications for intra-uterine treatment, the various means devised to meet them, and especially a new and safe instrument for uterine injection, the speaker said that his attention had been of late particularly drawn to the chemical effect, upon the bloody and other uterine discharges, of most of the agents commonly introduced into the uterus in the topical treatment of its diseases. The albumen, fibrine, and corpuscles of the blood, constituting, according to Flint, jun., about four-fifths of its bulk (according to those who reject their water of constitution, about one-fifth), are coagulated, by some of the agents used, into a solid mass. Most of these, indeed, have a greater or less coagulating effect, not only upon blood, but as well upon mucus and the various leucorrhœal discharges, which are highly albuminous. The important points are, that some kind of chemical reaction takes place between these agents and the fluids found in the uterus and vagina, and that this must greatly modify the effect of their application. A portion or the whole of the substance introduced will be neutralized and rendered inert by the discharges which it meets. Even chromic acid, for example, may be injected into a uterus filled with blood, and pour out of it without irritating the vagina, which is extremely sensitive to its action. Stillé mentions cases where pieces of lunar caustic have been swallowed without serious injury. Corrosive sublimate has such an affinity for albumen that the white of an egg is its best antidote. Tyler Smith says that leucorrhœal discharges, coagulated by injections, may remain in the vagina for days, and then come away in an egg-shaped mass. If this can take place in the vagina, with its large opening, it is far more likely to occur in the body of the uterus with its narrow outlet. That such coagulated masses were sometimes retained in the uterine cavity for an indefinite time, producing great irritation and protracted discharges, the speaker had had abundant occasion to observe.

If, then, inert chemical compounds are formed between the materials

introduced, by injection or otherwise, into the uterus and the fluids found there, the extent to which the uterine mucous membrane is affected by the application will depend upon the proportion between the two. And this will explain the discrepancies among gynæcologists regarding the value of various intra-uterine remedies. In this city the favourite method of application is by means of the probe, wrapped with cotton and dipped into a solution of the medicament. Dr. Sims uses a curved glass rod, without the cotton, and to this not more than two or three drops can adhere. The result of this treatment must be in most cases either negative or harmful. The greater part of the substance upon the probe will be rubbed off in passing the cervical canal. What remains will very likely be thrown into a puddle of albuminous fluid; or if the uterus be flexed, as is so often the case, it will probably come in contact with only one side of the organ, where the mucous membrane may be perfectly sound, and so be only damaged by the application; or it may meet with a tuft of exposed vessels, and produce the most violent uterine colic, metritis, ovaritis, &c. It is essential to the proper effect of remedies that, preparatory to their introduction, the uterus be cleared out as far as possible by suction with a syringe. But often the surface is coated with a tenacious discharge, to remove which we must employ a weak solution of muriatic acid, common salt, or some other solvent of albuminous matter.

Led thus to the belief that intra-uterine medication had hitherto been most unsatisfactory, the speaker had made a series of experiments, which he hoped others might follow up, so as to place this practice upon a more firmly established basis.

Styptics arrest hæmorrhage either by coagulating the blood or by constricting the vessels. To secure their action it is necessary to keep them for some little time against the bleeding part; this an injection into the flooding uterus often fails to do, though it may form a coagulum that will act as a tampon and so stop the flow. The most effective way to control uterine hæmorrhage is to inject iodine, and then plug the cervix with cotton and persulphate of iron.

To determine the coagulating effect upon albumen of different reagents, the doctor had added to white of egg, in test-tubes, a few drops each of undiluted solution of persulphate of iron, saturated solution of chromic acid, same of tannin, same of nitrate of silver, pure carbolic acid, and Churchill's tincture of iodine. These experiments were repeated before the Society and the test-tubes handed round. The iodine produced only a flocculent precipitate; but each of the other reagents combined at once with about its own bulk of albumen, in a firm globular coagulum, which could neither be diffused throughout the mass nor increased in size by shaking.

Next, to imitate the most watery of the uterine leucorrhœal discharges, the white of egg was diluted with four parts of water, and submitted to the reagents as before.

Persulphate of iron (Squibb's solution) coagulated the whole mass into a jelly.

Saturated solution of chromic acid instantly formed a coagulum, less solid than before, but still too consistent to pass through a canula. Chromic acid the doctor considered a much more powerful intra-uterine

remedy than persulphate of iron, and far more dangerous. If not neutralized by the secretions it might produce the most terrible results. It was the most destructive to animal tissues of all agents used in medicine, and a strong solution would, in twenty minutes, completely dissolve a small animal. Even its most cautious introduction into the uterus by the probe was not free from risk.

Tannin produced a coagulum easily washed away, giving the mass only a syrupy consistence. This agent had, in common with persulphate of iron, the merit of being but slightly irritant.

Nitrate of silver produced a profuse, flocculent precipitate, and sulphate of copper had the same effect. It was generally agreed that nitrate of silver is one of the harshest applications to the uterus, particularly in the fluid form. The speaker had once injected a five-grain solution, and came so near killing his patient that he had never experimented with it since. It was remarkable that it did not produce such severe results when applied to the uterine cavity in the solid form. To prove this, and to show how inefficient must be its ordinary superficial application, a long extract was read from Courty, who leaves the solid stick to dissolve in the uterus, as he claims with much benefit and no danger.

Alum produced no coagulum and so might probably be advantageously introduced into the uterus.

Saturated solution of carbolic acid in water produced a pulverulent precipitate. The doctor had found the injection of this solution give much pain, where that of iodine caused almost none. It was of much value, however, as an antiseptic.

The precipitate produced by iodine was not such as to interfere with the fluidity of the dilute albumen. There was no really potent remedy of which the uterus was so tolerant as of this. Even Churchill's tincture, undiluted, would be well borne where the most cautious use of nitrate of silver would give trouble. Of all intra-uterine remedies, iodine had most commanded the confidence of the profession. It was something more than a stimulant, a caustic, a styptic; it was a remedy *sui generis*, whose curative action could not be fully explained. The fact of its ready absorption made it especially valuable, where we wished to affect the deeper tissues of the uterus, as in chronic inflammation. Nitrate of silver or chromic acid, on the other hand, had only a stimulant or caustic action—indeed the absorption of the former would produce toxic effects.

In intra-uterine treatment we should begin by testing the tolerance of the organ, with tepid-water only, and then with a very weak solution of iodine. Though commonly almost destitute of sensibility, yet under some conditions the uterus becomes, like inflamed periosteum or peritonæum, exquisitely sensitive. But even in these cases it can usually be educated to bear injections of the requisite strength.

The result of a series of experiments upon blood, was in general, that most of the reagents above mentioned produced a coagulum firmer than that of pure white of egg. As before stated, the coagulum formed in the uterus by the persulphate of iron, though temporarily arresting hæmorrhage as a tampon, might afterwards keep up the flow by its irritant action. In a case of menorrhagia close at hand the speaker had

used this styptic, by the advice of Dr. Sims. It had at once stopped the hæmorrhage, but for five days since a discharge had been taking place. Yet there were some cases where we must use the iron and hazard the risks.

With regard to the treatment of endometritis and its complications, gynæcologists might be divided into three schools—the cutting school, the cauterizing school, and those who use no intra-uterine treatment, but depend upon vaginal injections, hygiene, and constitutional remedies. Perhaps a fourth school should be added—the eclectic, combining some elements of each of the others. Drs. Sims and Emmet were generally regarded as the representatives, *par excellence*, of the cutting school. The speaker had been much associated with them; and though he had often heard them charged with needless use of the knife and scissors, yet he had rarely seen bad results from their operations. They were both extremely cautious in the intra-uterine use of caustics; and he did not hesitate to say, from actual observation, that caustics often do more harm than comes from cutting the cervix.

Dr. Fordyce Barker observed that it was especially fitting that a full discussion of the subject should take place in a city where “intra-uterine medication might almost be said to have originated, and where it had been pushed to a more audacious extent than anywhere else.” His own special favourite substance for the last fifteen years had been the sulphate of zinc, which he especially employed in those more or less trying cases of menorrhagia, so frequently associated with the climacteric period, and unconnected with prominent organic disease, although the uterus is commonly enlarged. For excessive flooding in such cases, he employs a paste made of 1 oz. of the sulphate with 2 drachms of glycerine, which can be easily introduced through a canula the size of Simpson’s sound. From 3 to 5 grains of this paste is thus introduced, one or two applications sufficing; the hæmorrhage commonly not recurring, and no unpleasant symptoms resulting. Dr. Peaslee considered that the “cautious remarks from such a Nestor of the profession as Dr. Nott must have had good effect upon some of its younger members, who, he feared, are led on too rapidly and recklessly by the brilliancy of intra-uterine medication.” He believes that it should be resorted to in comparatively very few cases; and what these cases are, as well as what substances should be used, are far from settled—the practice at present being merely empirical. Dr. Peaslee has found iodine, strong solution of persulphate of iron, and saturated solutions of alum or of tannic acid safe and effectual agents, and therefore has an objection to so powerful a substance as chromic acid. Dr. Emmet, on the contrary, who has used this last substance more than any other person—and that for the last fifteen years—speaks highly of its efficacy. With equal weight of water it is no stronger than nitrate of silver, while it does not, like this, harden the tissues after repeated use. Dr. Kammerer said that he employed uterine injections daily; the cases, however, in which application need be made to the uterine cavity being rare, compared with those in which the canal of the cervix requires such treatment. Dr. Kammerer, however, always injects tepid water into the cavity of the body as a means of cleansing it, even when he intends only treating the canal of the cervix. It is chiefly in cases of flexion, especially ante-

flexion, that the cavity of the uterus is often found dilated with mucus, which is, however, not usually thick, but clear, transparent, serum-like. "I am in the habit of dilating the canal; and I frequently observe that, after cleansing the cervical cavity up to the internal orifice by a very small sponge or bits of cotton, that, on dilating the internal orifice, a teaspoonful or more of clear, serum-like fluid flows out, evidently from the cavity of the body. In these cases of catarrh of the body, I have often insisted that it is extremely important to keep the canal wide. These cases often improve by simple dilatation of the internal orifice, repeated once or twice a week for a certain length of time. Gradually the hypersecretion diminishes; sometimes with no local treatment at all. But sometimes I have found that the contents of the cavity were not simply serous, but mucous and purulent; and in these cases I invariably resort to intra-uterine remedies." Dr. Kammerer related two cases in proof of the great danger of the practice recommended by Courty of leaving portions of the solid stick of nitrate of silver to dissolve *in utero*. Dr. Whitehead has found, in slight cases of endometritis, a concentrated tincture of iodine (Dr. Budd's formula—iod. gr. lxxx., iod. pot. ʒss. sp. rect. ʒj.) very useful, applying it on a cotton-wrapped probe, which had been conveyed up to the fundus. He has met with ill-effects from the use of fused nitrate of silver, not to mention the constriction of tissue its frequent application gives rise to. Dr. Jacobi stated that he had employed undiluted carbolic acid in many cases without any ill-effects resulting. He thinks that the action of nitrate of silver is too localized.

At an adjourned meeting, Dr. Byrne observed, that after a long experience in the injection of powerful caustics into the cavity, he had abandoned their use, having late employed mild substances, such as solution of sulphate of soda, sulphurous acid, tannin, &c., which easily return from the uterus if a proper catheter be employed. He had also become fully convinced that in all cases of very troublesome intra-uterine affection there is some constitutional dyscrasia; and that no topical treatment is of permanent avail without keeping this in view, and giving the most careful attention to constitutional and hygienic measures. Dr. Gaillard Thomas stated, with all the authority of his large experience, an opinion which will certainly command assent in this country:—"Now, my impression is that intra-uterine injections do not constitute an advance in the treatment of uterine disease; that they have done and are going to do a great deal of harm; and that although they are popular, their evil results will cause them, after a more thorough trial, to be discarded." After narrating some cases in which fatal mischief resulted, he continues:—

"Now, these are selected cases, I allow; and it is by no means a final argument against any procedure that such selected cases should speak badly for it. The question is very different, however, from that in such a capital operation as amputation of the neck of the uterus, for example, which you enter upon expecting, and the patient and her friends expecting, that there is at least a chance of a fatal issue. Such an operation is justifiable, and often imperative, as offering the only chance of life, though it may be a very small one. But if the woman be suffering from some slightly annoying affection, she does not expect to

die from the routine procedure you may resort to for her relief, and you have no right to employ any means attended with such hazard. Again, I see no necessity for intra-uterine injections. My impression is that the uterus rarely contains over a drachm of fluid, and that it is an error to represent it as often containing a considerable amount of putrescent discharge. But if it have within it such fluid requiring removal, dilate the cervix and replace the organ, if ante or retroverted or flexed, and what is to hinder the fluid from coming out? The dilatation itself will accomplish much. Then, in addition, if necessary, give ergotine or ergot and general tonics; and, if required, introduce the cotton-wrapped probe. Every one knows the difficulty of removing the plug of viscid mucus from the cervical canal. For this purpose I keep a supply of little bits of sponge, not larger than my finger's end, which, being wet and squeezed, wipe the canal nicely, and then are thrown away. This done, I see no difficulty in passing up the probe armed with cotton, and painting over the whole internal surface. For myself, I never use intra-uterine injections, even for the hæmorrhage of abortion."

(C) CONCERNING THE DISEASES OF CHILDREN.

ART. 278.—*On Temperature Deviations in the Diseases of Children.*

By WILLIAM SQUIRE, L.R.C.P., London.

(*The Lancet*, June 4.)

At a meeting of the Obstetrical Society of London, held 5th May, Mr. Squire read a paper "On Temperature Deviations in the Diseases of Children." These observations were presented to the Society much in the order pursued in the inquiry. The first object was to gain by them a more definite idea of the natural history of the states of disease to which children are most liable; next to show their value in diagnosis, especially as an aid to the early detection of the infectious diseases; and lastly, their bearing on questions of therapeutics and hygiene. Some of the infectious diseases have a long incubative period, and the temperature falls on the throwing out of the rash, or on the local manifestation. This is seen in measles and in mumps. Others have a short incubative period, the temperature afterwards not having the same readiness to fall, as in scarlet fever, where, though the skin is the first tissue to be effected, it is by no means the last. Temperature changes accompanied a definite pre-eruptive period in measles and mumps. The incubative period, and the course of the disease, and of chicken-pox and rubeolæ were traced; a variety of the latter, with scarlet, fever-like rash, was clearly distinguishable from scarlet fever by a fall of temperature attending the rash. Influenza and whooping-cough were classed with scarlet fever, and numerous temperature observations of the whole course of these diseases illustrated their analogies. Influenza, like scarlet fever, is suddenly febrile, but the pyrexia has a tendency to subsidence on the third day; when it goes on to broncho-pneumonia, it is somewhat longer; and then there is a sudden fall of temperature

when secretion begins. Its passage into diarrhœa, gastric catarrh, quinsy, or herpetic or ulcerated sore-throat, was noticed, and three instances in different families given, where adults had the latter affection, while children suffered from influenza. Whooping-cough is shown to have a preliminary pyrexial period of from five to seven days, most marked in the most insidious cases. This also is true of diphtheria, and forms one of its chief distinctions from scarlet fever. There is a close correspondence between some of the observations in whooping-cough to those made in influenza and croup; but these two diseases, essentially identical, differ from it at first in being suddenly febrile, as well as in the after consequences. In diagnosis the distinction between typhoid fever and meningitis was illustrated by cases in infants. It is seldom that a single temperature observation could or should be made the basis of a diagnosis; it is not to show *what* a disease is, but *how* it affects the patient that the temperatures are taken. Elevation of temperature is indicative of disease of some kind, but the absence of disease cannot be affirmed because the temperature is unaffected. During the rapid growth of childhood sudden rises of temperature occur which do not show danger, but only necessity for care. After these disturbances, not always subsiding at once if there is bad air, bad food, or bad health, sometimes pulmonary or glandular congestions or deposits occur, and are found with a low temperature. The more sudden high temperatures of rapid growth have often been associated with gastric rather than pulmonary congestion. In therapeutics, a novel form of empiricism is to seek remedies to reduce temperature. The subsiding of temperature under certain forms of treatment is perhaps a good proof of the efficacy of treatment in the particular form of disease present. In this way the efficacy of cold to the surface in typhoid, and of quinine in the first week of scarlet fever, is evident. Quinine has at once checked the pyrexia in the early stage of whooping-cough, and has had no effect in its later stages, where a combination of atropine and morphia (one-sixteenth of a grain of each) has been useful. In one case, where, at a still later period, a temperature of 103° persisted, the use of a solution of chloride of ammonium in the form of spray, and fresh air, reduced this high temperature to 99° in two days. Chloral, though often useful in whooping-cough, and of some benefit here, did not reduce temperature, as, by giving sleep, it generally does. While temperature is high, sleep is impossible, and much of the nocturnal delirium and wakefulness of children in some illnesses is owing to this, especially in the first effects of a zymotic poison. This is when quinine is so useful. On the other hand, a marked increase of temperature results when the eliminating system is followed too closely. Dilute the poison by all means, by pure air especially; remove what you can; but to eliminate a poison, if that were possible, instead of eliminating the fluids of the body, the quantity of poison eliminated can only be in proportion to the diseased action present, so that to increase the one you increase the other. Though children in health have a lower temperature at night than in the day, yet when the depression is great, some hygienic effects are inferable. Where the author found as low a temperature as 97° in the night, he also found a low range in the day, and a special connexion between this and a dislike to or deprivation of fatty food.

In a collection of facts every conjecture is an error; yet it is possible that a low or easily depressed temperature may prove a useful guide in correcting the diet tables of workhouses and schools.

ART. 279.—*On Tubercular Meningitis.*

By Dr. VOGEL.

(*Treatise on the Diseases of Children.*)

Dr. Vogel denies that it is possible to prove the absence of inherited taint in this fatal disease, and, from several years of large practice in a poor district, he concludes that tuberculosis is far less common than it would be if external conditions had much influence in its production. He regards the arachnoid as the seat of tubercles in this disease. He observes that in this disease it is always to be remarked that an older, larger, yellow tubercle exists somewhere else in the body. He condemns the use of mercury in this disease.

ART. 280.—*Intussusceptio in an Infant Cured by Inflation of the Bowel.*

Under the care of Dr. WILKS, at Guy's Hospital.

(*The Lancet*, May 21.)

Cases of relief of an intussusception of the bowel by inflation deserve to be recorded, and the first of the two following instances is a good example of this method of treatment. Dr. Brinton, in his posthumous work on "Intestinal Obstruction," has referred to it in the following terms: "There are certainly instances on record in which an obstruction having every symptom of an intussusception has been suddenly removed by an inflation of the patient's rectum with a pair of bellows, the relief having instantaneously followed that severe pain which complete distension brings about." It is probable that, especially in cases where the intussusception is of the large intestine, this method of relief might be more generally employed than it seems to be at the present time. Our notes of this case are derived from the report by Mr. William Stranger.

William S.—, aged six months, admitted into Clinical Ward on the 28th of March, 1870. The child appeared in perfect health until yesterday afternoon, about four o'clock, when, whilst sucking a crust of bread, he suddenly screamed out, fainted, and became cold. The mother took him to a doctor, who gave him a powder, which made him very sick. He continued in great pain, and cried incessantly. At three o'clock this morning he passed a quantity of clotted blood per rectum, and this continued to run from him until he was admitted into the hospital at twelve o'clock. The last fecal evacuation took place at noon the previous day.

On admission, the child was seen to be well grown, but face pale, and had a generally collapsed appearance. On examining his abdomen, a lump was distinctly felt to the left and above the umbilicus, which hardened

when pressed upon. On passing the finger up the rectum a round projection could be felt about four inches up, with a circular orifice in the centre. The finger, when withdrawn, was covered with blood. The case being thus clearly one of intussusception, Dr. Wilks ordered inflation of the bowel by means of a bellows. Chloroform was given, and an enema tube passed into the rectum, the other end being attached to the bellows. The attempt to inflate was at first unsuccessful, owing to the large size of the rectum; but by increasing the width of the tube by wrapping a strip of lint round it, the colon was well inflated, and then the lump gradually went back until it quite disappeared. A drop of opium was ordered in a drachm of dill-water, and the breast to be given sparingly.

On the following day, March 29th, no lump could be felt. The child had been sick several times, and nothing had passed per rectum. To repeat the medicine.

March 30th.—Child very irritable; apparently much tenderness over abdomen, especially towards the right side. Occasionally sick. Passed a little blood, but no fæces.

31st.—Evidently better. Had a liquid evacuation with no blood, and sucks well.

April 1st.—Passed a natural motion, and altogether better.

2nd.—Child apparently well, and taken out by the mother, who was somewhat discontented at the operation performed on him, as she never could be made to realise the severity of the case.

He remained well until the 10th, when he was brought to the hospital, having had fresh bleeding, and the lump could again be felt. The mother would not allow the child to be again taken in for the purpose of a renewal of the method which had been before so successful, but took him away for the purpose of procuring some physic for him; and no more was heard of the case.

Dr. Wilks remarked that this was a good model case of intussusception and of the appropriate treatment. The nature of the involution was of the usual kind—the ileum into the cæcum, and the subject a boy, as is most commonly the case. There was, however, one symptom which had not been hitherto remarked—viz., the collapse at the time of the occurrence of the passing in of the bowel. The sickness and constipation denoted intestinal obstruction, and the passage of blood that this was caused by intussusception. This symptom was first clearly established as a characteristic sign of this accident by Mr. Gorham, who wrote an excellent article on the subject in the *Guy's Hospital Reports* for the year 1838. If there had been any doubt as to the nature of the case, this would have been removed by the discovery of a tumour in the abdomen, which contracted on being handled, and by the fact of the rosebud-like projection to be felt in the rectum. This showed that the intussusception was very extensive. The treatment was then clear, and, as in other cases, was completely successful. Dr. Wilks's wish was to keep the child in for some time, continue the opium, and feed him most sparingly. It was also discussed whether a pad over the abdomen might be efficacious in preventing a return of the intussusception.

ART. 281.—*Vomiting and Purging in Cholera Infantum.*

By B. M. WIBLE, M.D., of Louisville.

(The American Practitioner.)

Dr. Wible uses the following formula when vomiting and purging are prominent symptoms: R Tinct. opii, gtt. xvi; potas. bicarb. ʒss; syrup. simplicis, ʒiij; aquæ menth. pip. ʒx. M.

Of this a teaspoonful is to be administered after each act of vomiting and purging. This prescription has answered his highest expectations.

ART. 282.—*On the Treatment of Chronic Hydrocephalus.*

By W. HOWSHIP DICKINSON, M.D., F.R.C.P., Physician to the Hospital for Sick Children, Assistant Physician to St. George's Hospital.

(The Lancet, August 13.)

With the diverse circumstances under which cerebral dropsy arises, remedies which are beneficial in one case may be hurtful in another. The treatment of the disorder must be guided by its cause.

Those rare cases in which the effusion is encysted in the arachnoid cavity are seldom recognised during life, and may be dismissed as not included in our therapeutical experience. If such a case presented itself in an unmistakable shape, and the skull were still membranous, we might hope to do good by puncturing the cyst, and approximating its walls by external pressure.

As to ventricular dropsy, which is the only form we need consider, treatment may be productive of good or harm, as it is well or ill adapted to the nature of the case in hand. We must first consider whether we have to deal with increased cerebral pressure, or diminished cranial resistance.

If the disorder has commenced with active brain symptoms, convulsion, coma, or vomiting, these symptoms having preceded enlargement of the head, and more especially if they have come on subsequently to the general ossification of the skull, we may infer that there is an increase of fluid pressure in the ventricles, and may attribute the complaint to venous obstruction or inflammatory disturbance. Under such circumstances our hope of doing permanent good will be small, inasmuch as we know of no therapeutical measures which will reopen occluded channels, remove tubercle, or even put a stop to simple inflammatory exudation. Our endeavour in such cases must be to prolong life by keeping under the effusion of fluid—in most cases only a temporary relief. Purgatives, diuretics, and evacuates of the mercurial class, appear to offer the best chance; purgatives telling upon the effusion, and also upon the strength of the patient, more decidedly than diuretics. It has been sometimes found that hydrocephalus has promptly subsided upon the spontaneous occurrence of purging or diuresis; and it is equally a matter of observation that the same result has followed upon

the use of medicines which exaggerate secretion. Of all drugs directed to this end mercurials give, as far as Dr. Dickinson has seen, the best results. The old view that mercury arrests inflammation and causes the absorption of effused lymph has indeed been abandoned. We know that inflammation (excepting perhaps syphilitic inflammation) runs its course regardless of calomel. A layer of "coagulable lymph" upon a cerebral or serous surface is incapable of removal, excepting by such mechanical means as cannot be employed during life; it passes through its natural transformations in contempt of the pharmacopœia, and in its most favourable issue will form a layer of false membrane which will last as long as the individual of whose structure it forms a part. We must not therefore expect more than a limited advantage from mercury; but a limited advantage we may hope to secure. The solid products of inflammation are beyond our reach; but not so the liquid. Experience bears strong testimony as to the use of mercury wherever there is *fluid* pressure within the head; and as this occurs in a considerable proportion of the cases of cerebral disturbance which come under the care of the physician, there is reason in the rule, "when in doubt, give mercury." A grain of grey powder or calomel two or three times a day, with or without mercurial inunction, will often diminish the pressure of intra-cranial fluid, and avert threatening symptoms. An efficacious mode of applying the remedy is in the combination of blue-pill, digitalis, and squills, as recommended in cases of dropsy by Dr. Matthew Baillie. A grain of blue-pill, with a third of a grain of squills, and a sixth of a grain of digitalis, will answer the purpose.

Such remedies are for palliation rather than cure; for the mitigation of symptoms rather than the arrest of disease. There may be cases in which such measures may, by gaining time, enable the patient to outlive such a temporary morbid condition as a limited coagulum in a venous channel, or an inflammatory attack independent of tubercle or permanent change. Such favourable circumstances are, however, unfortunately rare.

In those more numerous cases of chronic hydrocephalus in which there is no evidence of increased pressure within, in which the enlargement has not been heralded by convulsion, vomiting, or any other sign of cerebral disturbance, in which we may infer that the fault is in the cranium rather than in the brain, connected with imperfect ossification rather than with obstructive or inflammatory disease—in these cases we can generally relieve and sometimes cure. The judicious use of external pressure is of the first importance; it seldom fails to stop further increase, and will often, in conjunction with other measures, occasion a decided diminution in the size of the head. Dr. Dickinson has found it the best way to surround the head with a fillet of elastic webbing, the size of which is adjusted to keep a pressure upon the head just short of causing red marks or impressing the skin with the texture of the material. It should be from two to three inches wide; the lesser width answers best unless the enlargement is very considerable. Care must be taken, by shifting the bandage, to prevent irritation of the frontal eminences, which are often inconveniently prominent in these cases. Cod-liver oil, iron, and other remedies adapted to the rickety constitution, may promote ossification, help time to solder

together the disjointed bones, and put an end to the progress of the disease. These remedies may be conjoined with others, chiefly of the diuretic class—digitalis, liquor hydrargyri, or acetate of potass, which may help to lessen the accumulation. Dr. Dickinson has learned, however, in these cases, to attach a less importance to evacuant measures than to those directed to the rickety state.

ART. 283.—*Antiphlogistic Treatment in Diseases of Children.**

By A. JACOBI, M.D., Clinical Professor of Diseases of Children,
College of Physicians and Surgeons, New York.

(*The Medical Record*, Oct. 1 and 15.)

Ergot.—If there be any doubt that quinine acts through the nervous system—and there are some who think it acts simply through a change worked in the blood—there can be no such doubt, says Dr. Jacobi, concerning ergot. Partly from the physiological experiments of Brown-Séquard, and partly from clinical observation, it must now be considered a fixed fact that ergot acts through the nervous system, and especially through the sympathetic, upon the unstriated muscular tissue under its control. Thus it is that ergot produces its peculiar effect upon the muscular tissue of the uterus, the unstriated fibres of the bladder, the muscular layers of the intestines, and especially upon the muscular coat of the blood-vessels. Its power in diminishing the size of the blood-vessels is manifest from its value as a hæmostatic; and it is of this power we have to speak in considering its antiphlogistic effect.

This effect is noticeable in fevers generally, and particularly in fevers of the intermittent type. It is an established fact, in the author's opinion, that many cases of obstinate intermittent fever will, when no longer benefited by quinine or arsenic, still be benefited by the action of ergot. Dr. Jacobi's first experience with the drug as an antifebrile was in cases of this nature—in very obstinate intermittents which yielded to this after other remedies had been proved powerless. From that time—about a dozen years ago—he has given it not only in intermittent fevers, but in a number of other affections, chiefly the following:

In many cases, not uncommon in women and children, of spinal meningitis—resulting in pain in the spine, slight fever, occasional convulsions, partial or total paralysis—the author has given a mild preparation of ergot, and has uniformly found a beneficial effect.

Dr. Jacobi has given ergot in the first stage of the so-called infantile paralysis, or, as he inclines to call it in most cases, the spinal paralysis of children. For he takes it that the great majority of instances of "infantile," or "dental" paralysis are dependent upon congestion of the spinal cord, that is, dilatation of the blood-vessels, and usually with hæmorrhage taking place to a small extent inside the vertebral canal. It usually happens that such children are paralysed in one lower extremity, or in both; now and then also in an upper extremity; sometimes

* Remarks before the *New York Medical Journal Association*, April 15 and 22, and May 27, 1870.

without premonitory symptoms, sometimes with prodromic fever, severe or slight, &c. These symptoms are, to the author's mind, best explained, in most cases, by supposing an extravasation with the attendant dilatation of blood-vessels. The common observation is, that such cases soon begin to improve immediately after the affection has set in; improve very rapidly for four, five, or six days; improve slowly for five or six weeks more; and then the process stops, no benefit being derived from any treatment, except perhaps from the electrical. As the pathology includes dilatation of the blood-vessels in the neighbourhood of the seat of hæmorrhage, not only producing the effects of congestion, but also incurring the liability to further extravasation, Dr. Jacobi gives ergot to contract the vessels, and he has uniformly seen that in such cases as came under this treatment, even so late as the second or third week, the improvement was much more rapid than in those where nothing was done. But many of the cases we do not see at all until it is too late to do anything.

In several cases of chorea minor, or St. Vitus' dance, Dr. Jacobi has used ergot with great benefit—not in the form dependent on rheumatic affection and found in the course of slight articular rheumatism, but in that form which goes hand in hand with pain in some portion of the spinal column, and can be traced back to spinal meningitis.

Now and then we have neuralgic affections depending upon spinal meningitis, which will be helped by ergot, if given early, at the same time that slight purgatives, &c., are not omitted—all those cases of pain in the back, with perhaps slight intercostal neuralgia, perhaps slight herpes zoster, which are not improved by the usual treatment, but require something to act upon the blood-vessels.

Dr. Jacobi has tried ergot also in some cases of brain disease, but cannot say that he has been so successful there; at all events, he cannot lay his finger upon such a number of successes as he is confident that he has gained from this remedy in diseases of the spinal canal. In diseases of other organs Dr. Jacobi has had very little experience with it, and so is not prepared to recommend it so highly as he has done in the cases mentioned.

The only preparations of ergot used to any great extent are the *ergotine*, so-called, of Bonjean,—a French preparation in solid-extract form, which makes a good pill mass,—and the fluid extract prepared by Dr. Squibb. Dr. Jacobi has been so well satisfied with these two preparations that of late he has used no other; though before Squibb's fluid extract came into market, he employed a decoction in water, with the addition of a little sulphuric acid. The doses should be much larger than those prescribed in the books. Dr. Jacobi has seldom seen much effect from the usual doses, but he seldom missed the desired effect from the larger ones. In a case of spinal meningitis in a child two or three years of age, he would give *at least* two drachms of Squibb's fluid extract in the day, or from four to seven grains of Bonjean's ergotine. Where its use is to be long continued, for chronic hæmorrhages, &c., about a scruple of the ergotine is given daily, to an adult; and to a child in proportion to age. None of the symptoms of so-called ergotism, whether of the spasmodic or of the gangrenous form, has Dr. Jacobi seen.

Alcohol.—As a stimulant, Dr. Jacobi gives alcohol for its antiparalytic effect. He regards it as a dietetic agent; and in the hot summer weather he makes all his children take a little whisky or brandy in the water they drink. For if there is anything to which we owe our great amount of intestinal catarrh, &c., it is paralysis of the nervous system from heat; and Dr. Jacobi finds those children who take a little brandy to counteract this, every hot day through the summer, escape the bowel complaints, and do very much better. Like other physicians, the author uses alcohol in typhoid fever and secondary pneumonia; and most of the pneumonias we have to deal with in children are of this character, and very soon require the use of stimulants such as will at the same time reduce the temperature.

According to Dr. Jacobi's experience, patients who are given alcohol as a febrifuge do not acquire a taste for stimulants. As soon as they begin to eat well they leave off the drinking of their own accord. In cases of phthisis, it is true, the patients will commonly drink until they die; but as a rule Dr. Jacobi does not make his phthisical patients take much alcohol, although there are some cases, attended by a good deal of fever, where it may do considerable good. In inflammatory fevers after the acute stage has passed by, and in chronic fevers throughout, whenever the temperature gets very high or the pulse very frequent, alcohol is indicated.

Camphor, though formerly classed with alcohol as a simple stimulant, has like that the property of reducing the temperature. Dr. Jacobi has found, he believes, that the effect of alcohol is developed more speedily than that of camphor, but also passes off sooner. If he wished to get a very rapid stimulant effect, he should select, first, sesquicarbonate of ammonia; second, alcohol; third, camphor. Camphor in combination with quinine or alcohol does remarkably well in secondary pneumonia.

A word further about *opium*. As an antiphlogistic it certainly has its own merits in a number of diseases, but chiefly those of adults. For children Dr. Jacobi uses it a great deal in enteritis and peritonitis; very seldom in other inflammatory diseases. Now and then, it is true, he employs it as an adjuvant—say, in pneumonia with very severe inflammation and intense irritation; but he has not seen sufficient reason to make it the principal remedy in any inflammatory condition of infants, save peritonitis.

Dr. Jacobi next speaks of those antiphlogistics used in chronic inflammations—that is, in inflammations where the first change of an inflammatory character has passed by, and changes in tissue have taken place; the new-formed cells of the active stage have passed, for example, into fibres of connective tissue, or have undergone a degenerative change into pus. The remedies chiefly used in chronic inflammations are iodine and mercury.

Iodine.—The preparations of iodine most in favour for internal administration are the iodide of potassium, the iodide of sodium, and perhaps also the combination of iodine with iron. It has long been known, from clinical experience, that iodine has a good effect in inflammatory diseases of the glandular tissue.

The iodide of potassium given internally (or the iodide of sodium in which Dr. Jacobi prefers as being more digestible) has more effect,

the treatment of inflammatory enlargement of the tonsils than the application of iodine, because it enters the general circulation, and so enters the gland with the blood. It will act with benefit before the connective-tissue fibres have become fully developed, but not afterwards. The same thing may be said of the treatment of cirrhosis of the liver, interstitial inflammation of the lungs, &c., where we have the same kind of new formation. Fully developed connective-tissue fibres are not influenced by iodine.

A mode of applying iodine which Dr. Jacobi has often resorted to, especially in glandular affections about the neck, is not, he thinks, in common use. If we can apply our remedy directly to the lymphatic absorbents going to the affected gland, we certainly do better than if we exhibit it internally and run the risk of its being lost. Now, the lymphatic glands of the neck can be so reached. For example, most of the lymphatic glands in the neighbourhood of the parotid and of the arch of the inferior maxilla, the majority of which are covered by the sterno-cleido-mastoid muscle, can be reached through their absorbent vessels situated in the lower portion of the nose and in the cavity of the mouth. By applying, according to E. Schönfeld, the iodide of potassium locally, either in powder or in solution; by painting the tonsils and the pharynx with tincture of iodide; by now and then using a mouth-wash of iodide of potassium, especially for glands situated near the median line—we can get the discutient action of iodine upon these glands much better than in any other way. Dr. Jacobi is confident that he has thus obtained good results where he had long given up other treatment in disgust.

Dr. Jacobi believes the use of tincture of iodine as a local derivative in recent cases of glandular swelling will do good in this way, simply as a derivant, and not that anything is absorbed through the skin, for if there be any absorption at first, there will not be after a few applications.

The salts of sodium being all more digestible than those of potassium, Dr. Jacobi prefers the iodide of sodium to that of potassium. It requires a larger dose, however—about double. Where he should give a baby four or five grains of iodide of potassium in the day, he should give eight or ten of iodide of sodium. As to salves, from those usually found made up, Dr. Jacobi has seen no effect; and he thinks iodine is never found in the urine after their inunction. A better vehicle to insure the absorption of iodine by the skin, where the stomach refuses it, is glycerine. It is a positive fact that iodine will be found in the urine within twelve hours after the first embrocation of a solution of iodide of potassium in glycerine. Dr. Jacobi usually dissolves about half an ounce, or less, of the iodide in an ounce of glycerine.

Mercury.—Mercury is a drug which we all know is used a great deal as an antiphlogistic, in acute as well as in chronic diseases. Dr. Jacobi has not the slightest doubt that it is used much more than it ought to be, and especially in diseases of children.

It has been said that it is much better tolerated by infants than by adults, and this has been taken as a reason for dosing them with it. It has been said that infants will not be salivated by mercury. True enough, and for the best of reasons. Infants, up to the end of their

third month, have, as it were, no salivary glands—at least, no genuine salivary secretion. This much has been proved by the researches of Prof. Ritter, of Prague. (There is an exceptional case on record of secretion of saliva at the seventh week.) And if these glands are thus rudimentary, we should not expect to find even a morbid secretion excited by agents which would affect them powerfully when more developed. But, it is argued, even older children are not salivated so readily as adults. This is chiefly because they have fewer teeth; so the mercury has less chance to be retained in the mouth till it is absorbed, to be thrown again into the mouth with the saliva, and then re-absorbed, thus producing the maximum local effect, as in the salivation of adults.

The general effect upon the system, however, remains the same; and it is this general effect which is the very worst in any inflammatory disease, especially of children. Mercury is said to have an antiplastic effect, to diminish the fibrine in the blood. But inflammation means now a very different thing from what it did formerly. We know that when the blood is thinner than normal, inflammatory effusion and exudation, like effusion generally, will take place more readily. So, whatever we do to change the blood, except to improve it, is, in Dr. Jacobi's opinion, injurious, no matter what the disease we have to deal with. If an inflammatory disease has a tendency to effusion, and if, moreover, it has a tendency to debilitate the system by impoverishing the blood, we should avoid every remedy which will conduce to this impoverishment, as mercury will certainly do.

Again, the principal effect of mercury is not one rapidly developed; it requires a great number of small doses to obtain it within a day or two. But in the inflammatory diseases of children the effect we seek must be a very speedy one; unless we can get it within a day or two we may as well give up the attempt, for before that time effusion would be established; the inflammatory action of exudation would be completed, and then the regular process of disintegration and absorption must take place—a process better carried on by good normal blood than by blood impoverished by debilitating drugs. Clinical experience testifies that whatever we do to weaken the blood interferes with rapid convalescence after an inflammatory disease.

In diarrhœa, &c., where mercurial preparations are so often used, the author has made it a rule to give them as rarely as possible. He has forbidden the use of calomel and its cognates to all his dispensary and clinic patients; there is not one of them that has had a grain of calomel for ever so many years. Dr. Jacobi makes this statement, pedantic though it seem, to show that we can get along without mercury in most of the cases where it is usually given. There is but one class of affections in which he would and does employ it—that in which a new formation is of a heterogeneous character, as, for instance, in syphilis. Dr. Jacobi seldom uses anything else than calomel in the syphilis of the new-born, and seldom does he find it called for in any other disease.



INDEX TO VOL. LII.

	PAGE
ABSCCESS in different localities. By Frederic C. Skey, C.B., F.R.S.	184
Acid, carbolic, anæsthetic properties of. By Erasmus Wilson, F.R.S.	101
„ „ on the action of, in variola. By M. Isambert . . .	142
Acupressure, a practical treatise on. By J. C. Hutchison, M.D. . .	231
Adams, Mr. J. E., specimen of dislocation of the wrist . . .	277
„ Mr. William, on the subcutaneous division of the neck of the thigh bone, as compared with other operations for rectifying extreme distortions at the hip-joint with bony ankylosis . . .	291
Addison's disease, a case of. By T. P. Heslop, M.D. . . .	35
Albanese, Dr., on arterial transfusion	201
„ Prof., on the treatment of hydrocele of the tunica vaginalis . . .	262
Alcohol, amylic, the true normal	159
Alkalines, on the action of, upon the organism. By MM. Rabuteau and Constant	145
Allbutt, Dr. Clifford, on a form of functional hemiplegia in child-bearing women	333
Aloe, vinum, on the use of, in ulceration. By H. F. Nathan . . .	175
Aluminium, the chloride of. By E. Lund	143
Alvarenga, Prof., on the classifications of cardiac perforations . . .	85
Amyl, nitrate of. By Benjamin W. Richardson, M.D., F.R.S. . . .	134
Anderson, Dr. M'Call, on the treatment of syphilis	124
„ „ on the value of iodide of potassium in the treatment of syphilitic skin diseases	143
Andrews, Dr. George P., on functional dyspepsia	97
Aneurism, femoral, cured by rapid pressure. By John Russell . . .	281
„ popliteal, case of. Under Mr. H. Smith	282
Angina, ulcero-membranous. By J. M. Da Costa, M.D.	91
Anthrax and boils of the face, on the cause of the special gravity of. By M. Reverdin	249
Antiphlogistic treatment in diseases of children. By A. Jacobi, M.D. .	354
Aorta, aneurism of the. By Christopher Heath	255
Aphthæ, treatment of. By Eustace Smith, M.D.	90
Apomorphia, on	162
Apoplexy, on. By J. M. Da Costa, M.D.	51
Arloing, M., of the pathogeny of tetanus	53
Arsenic in irritative dyspepsia. By J. C. Thorowgood, M.D. . . .	169
„ on the use of, in certain painful affections of the stomach and bowels. By Arthur Leared, M.D.	168
Arteries, on the tension of. By J. D. Hill	203

	PAGE
Artery, superficial femoral, successful ligature of the. By C. J. Gibb, M.D.	284
Aufrecht, Dr., on caseous broncho-pneumonia (pulmonary phthisis)	74
BALÆSTRA, M., on the nature and origin of miasms	13
Ball, Dr. B., on shaking palsy	60
Barnes, Mr. J., on instruments : ancient and modern	136
„ Dr. Robert, on a new operation of embryotomy	332
„ „ on uterine hæmorrhage	319
„ „ on the application of the long forceps	315
Bell, Dr. J. R., case of epileptiform convulsions	42
„ Mr. Anthony, on epileptiform convulsions	49
„ Rev. David, M.D., on tonics with aperients in constipation	176
Belladonna, on the action of, in arresting nocturnal incontinence of urine. By J. B. Yeo, M.B.	181
Bennet, Dr. Henry, on the connection between inflammatory conditions of the uterus and its displacements	339
Bennett, Dr. J. H., on chloral, an antidote to strychnia	126
Beuf, Dr. Le, on the expectant treatment of pneumonia	79
Bickerton, Mr. T., on the treatment of lesions of the lachrymal apparatus	248
Binkerd, Dr., on burns	170
Bing, Dr. C., on the use of quinine in the diseases of childhood	171
Black, Dr. Campbell, on certain circumstances which contribute to impede the progress of scientific medicine and surgery	14
Bladder, on the cure of chronic perforating ulcer of the. By Lawson Tait	272
Blistering, on, in urgent cases. By J. H. James	174
Blood-pictures. By J. Day, M.D.	127
Bones, on refracture of. By F. C. Skey, C.B., F.R.S.	142
Braidwood, Dr. P. M., on annual vaccination	132
Brain and spinal cord, sclerosis of the. By Meredith Clymer, M.D.	58
Bramwell, Dr. J. B., on blood-letting in scarlatinal dropsy	21
Breast, partial removal of, for scirrhous. By Luther Holden	254
Bright's disease, on. By Samuel Wilks, M.D., F.R.S.	107
Bromides, the, their physiological effects and therapeutic uses. By L. C. M'Elroy, M.D.	139
Bromidrosis, on. By E. A. Brown	116
Brown, Dr. J. C., table for the examination of urinary calculi	180
Browne, Mr. E. A., on bromidrosis	116
„ „ on the early stages of syphilis as affecting the skin	229
Buboes, venereal, on the diagnosis and prognosis of. By Prof. Zeissl	276
Bumstead, Dr. Freeman, on syphilization	228
Burge, Dr. J. H. H., on the nature and treatment of croup	72
Burns, on. By F. C. Skey, C.B., F.R.S.	190
„ local applications to. By A. D. Binkerd, M.D.	170
Buzzard, Dr., case of sick headache	47
CAMERON, Dr. John, a case of removal of a penny which had been impacted for six years in the larynx	234
Cancer, on the microscopical appearances of. By Robert Hamilton	12
„ of the larynx, on. By Dr. Desormeaux.	235
Cardiac perforations, on the classifications of. By Prof. Alvarenga	85
Carotid, common, two cases of ligature of the. By William M'Cormac	250
Carter, Mr. Brudenell, on optic neuritis	239

	PAGE
Cartilages, diarthrodial, a case in which two had been united by means of true cartilage. By M. Panas	302
Chambers, Dr. T. K., on the treatment of acute indigestion	94
Chancre, phagedænic, case of, cured by a provoked attack of erysipelas. By M. Desprès	275
Chilblains and chapped hands, treatment of	198
Children, on temperature deviations in the diseases of. By W. Squire	347
Childhood, quinine in the diseases of. By C. Bing, M.D.	171
Chisolm, Dr. J. J., on fistula in ano	261
Chloral, action of, in general paralysis. By William Macleod, M.D.	158
" on the influence exerted by, on the pain of parturition. By E. Lambert	157
" hydrate of, on. By Martin Oxley, M.D.	155
" hydrate of, in pertussis. By Charles Murchison, M.D., F.R.S.	156
" ill effects of. By S. O. Habershon, M.D.	156
" an antidote to strychnia. By J. H. Bennett, M.D.	126
Cholera infantum, vomiting and purging in. By B. M. Wible, M.D.	352
Chorea, epileptic, of the right arm. By T. Laycock, M.D.	178
Cicatrices from burns, on. By F. C. Skey, C.B., F.R.S.	191
Clark, Dr. Andrew, on local inflammations in certain defined conditions as causes of pulmonary phthisis	81
Clavicle, on fractures of the sternal extremity of the. By Robert W. Smith, M.D.	278
Clouston, Dr. T. S., on the thermometer in the diagnosis and treatment of insanity	179
Clymer, Dr. Meredith, on sclerosis of the brain and spinal cord	58
Coccyodynia, a case of. By W. R. Fox, M.D.	331
Colic, hepatic. By Dr. Senac	104
Colin, Prof., on general paralysis of the insane following local lesions of the brain, especially cerebral hæmorrhage	65
Conium and its alkaloid, on the physiological and therapeutical actions of. By MM. Damourette and Pelvet	163
" on the preparations of, and their doses. By Henry Dodgson, M.D.	161
Conjunctivitis, on nitrate of silver in. By Henry W. Williams, A.M., M.D.	169
Constant, M., on the action of alkalines upon the organism	145
Constipation, tonics with aperients in. By the Rev. David Bell, M.D.	176
Consumption, pulmonary, treatment of. By James Turnbull, M.D.	82
Coutaret, Dr., on the symptoms of salivary or amylaceous dyspepsia.	95
Convulsions, epileptiform. By Anthony Bell	49
" " By J. R. Bell, M.D.	49
" puerperal. By Dr. Hall Davis	320
Cooke, Mr. Weeden, on an improved operation for fistula in ano.	261
Copeman, Dr. Edward, on tumours of the pelvis obstructing delivery	318
Cornea, ulcers of the, treatment of. By T. S. Walker	240
Counter-irritation, a defence of. By Alexander Davidson, M.D.	174
Cranium, on the diagnosis of fracture of the. By Dr. Debeeder	251
Creasote, on the employment of, in typhoid fever. By M. Morache	176
Croup, on the nature and treatment of. By J. H. H. Burge, M.D.	72
" on the treatment of. By Dr. Daguillon	74
" treatment of. By Dr. Vogel	75
Cumming, Dr. James, on the means of ascertaining the sex of the child	313
Cyanosis, on. By Prof. Rokitansky	86

	PAGE
Cyanosis neonatorum. By Charles D. Meigs, M.D.	87
„ autopsy of a case of. By W. H. Sheehy, L.R.C.P.	86
DA COSTA, Dr. J. M., on apoplexy	51
„ „ on coating of the tongue	90
„ „ on the application of the laryngoscope	177
„ „ on ulcero-membranous angina	91
Daguillon, Dr., on the treatment of the croup	74
Damourette, M., on the physiological and therapeutical actions of conium and its alkaloid	163
Davidson, Dr. Alexander, on counter-irritation	174
„ „ on the vegetable parasites of the skin	123
Davis, Dr. J. Hall, case of extra-uterine pregnancy	311
„ „ puerperal convulsions	320
Day, Dr. John, on blood-pictures	127
Debeeder, Dr., on the diagnosis of fracture of the cranium	251
Delirium tremens, treatment of, by Charles Murchison, M.D., F.R.S.	38
De Morgan, Mr. Campbell, case of dislocation of the hip into the thyroid foramen—reduction with aid of pulleys, after failure by manipulation	297
Desnos, M., on the diagnosis, prognosis, and treatment of variola	30
Desormeaux, Dr., on primary cancer of the larynx	235
Desprès, M., a case of large phagedænic chancre cured by a provoked attack of erysipelas	275
Diabetes, on bromide of potassium in. By Austin Flint, M.D.	139
„ on the origin of. By W. T. Lusk, M.D.	109
Diarrhœa and dyspepsia, on the use of raw meat in. By Robert Druitt, M.R.C.P.	93
Dickinson, Dr. W. H., case of lardaceous disease of the kidney, consequent on abscess of the ovary	334
„ „ on chronic hydrocephalus	352
Dickson, Dr. J. Thompson, on the nature of the condition called epilepsy	50
Diet of parturient women. By Hugh Miller, M.D.	315
Diphtheria, and its treatment. By William Marshall, M.D.	75
Disinfectants, on. By Dr. Ranse.	147
Dislocations, on the reduction of. By Warren Greene, M.D.	219
Dobson, Mr., on skin-transplantation	212
Dodson, Dr. Henry, on the preparations of conium and their doses	161
Dressing, simple, on, by continuous bathing. By M. Le Fort	197
Dropsy, blood-letting as a remedy in. By J. P. Bramwell, M.D.	21
„ case of acute renal. Under the care of Henry Thompson, M.D.	107
Druitt, Dr. Robert, on scarlet fever.	19
„ „ on the use of raw meat in diarrhœa and dyspepsia	93
Dron, Dr., on the particular mode of transmission of syphilis from the nurse to the child in suckling	228
Duchenne, Dr., on the value of the different methods of electrization	154
Duckworth, Dr. Dyce, treatment of hæmoptysis	80
Duncan, Dr. J. M., on the mechanism of production of face-presentation	306
Durham, Mr., case of spontaneous fracture of the femur.	298
„ Mr. Arthur, on the electrolytic treatment of hydatid tumours	141
Dysentery, cases of. By John Murray, M.D.	101
„ veratrum viride in. By A. M. Ragland, M.D.	177

	PAGE
Dysmenorrhœa, membranous, on the symptoms and diagnosis of. By MM. Huchard and Labadie-Lagrave	323
Dyspepsia, arsenic in. By J. C. Thorowgood, M.D.	169
„ functional, on. By G. P. Andrews, M.D.	97
„ salivary or amylaceous. By Dr. Coutaret.	95
„ and diarrhœa, on the use of raw meat in. By Robert Druitt*, M.R.C.P.	93
ECTROPION, cicatricial, on the treatment of. By Dr. Mirault	247
Eczema: its nature and treatment. By Tilbury Fox, M.D.	113
„ labialis, unusual form of. Under the care of Tilbury Fox, M.D. . . .	114
Elephantiasis of scrotum and leg, case of. Prof. J. Fayrer, M.D. . . .	274
Electricity, therapeutical uses of. By J. Russell Reynolds, M.D., F.R.S. . .	148
Electrization, on the value of the different methods of. By Dr. Duchenne	154
Electrolysis in bronchocele and other tumours. By Adolphe Wahl- tuch, M.D.	153
Embryotomy, new operation of. By Robert Barnes, M.D.	332
Epidermic transplantation, on. By M. Marc Sée	212
Epilepsy, on the nature of the condition called. By J. T. Dickson, M.D. . .	50
Erb, Prof., cases of traumatic facial paralysis	253
Eruption, vesicular, case of, on the abdomen. By William Roberts, M.D. . .	122
Eruptions, cutaneous, after operations and during the course of sur- gical septicæmic affections. By M. Tremblay	117
Erysipelas, on sulphate of quinine in the treatment of. By Dr. Perroud	172
Ether, ascetic, as an anæsthetic. By Horatio C. Wood, M.D.	159
Ethers, on the triethylic and trimethylic. By Benjamin W. Richard- son, M.D., F.R.S.	134
Eulenburg, Dr. Albert, on visceral neuralgia	24
„ on the pathology of the great sympathetic	45
FACE-PRESENTATION, mechanism of production of. By J. M. Duncan, M.D.	306
Fagge, Dr. Hilton, on the electrotype treatment of hydatid tumours	141
Fayrer, Dr. J., a case of broken neck	235
„ „ case of elephantiasis of scrotum and leg	274
Femur, caries of condyle of. Under the care of Mr. Hulke	293
„ case of supra-condyloid fracture of the. By M. Le Fort	294
„ case of spontaneous fracture of the. By A. Durham	298
Fergusson, Sir William, Bart., removal of a tumour of the lower part of the humerus.	279
Fever, infantile remittent, on. By Samuel Wilks, M.D.	349
„ milk, on	321
„ relapsing, microscopical characters of the blood in. By H. C. Hand, M.D.	12
„ scarlet, on. By Robert Druitt	19
„ „ and its prevention. By George Johnson, M.D.	17
„ „ with especial reference to pathology and treatment. By R. Renfrew, M.D.	22
„ typhoid, on the employment of creosote in the treatment of. By M. Morache	176
„ „ critical study of. By Dr. Soulier	28
„ abortive typhoid, or typhoid febricula. By Dr. Laveran	27

	PAGE
Fistula, biliary, notes of a case of. By G. H. Philipson, M.D.	104
„ hepatic. By M. Signerolles.	105
„ in ano, on. By J. J. Chisolm, M.D.	261
„ „ improved operation for. By W. Cooke	261
Forceps, long, on the application of the. By Robert Barnes, M.D.	315
Flint, Dr. Austin, on bromide of potassium in diabetes	139
Fort, M. le, case of supra-condyloid fracture of the femur.	294
„ „ on simple dressing by continuous bathing	197
Fothergill, Dr. J. M., on the preservative agency of lowered vitality.	14
Fournier, M., case of syphilitic gummatous tumour occurring fifty-five years after the commencement of the infection	299
„ „ on the laws which preside over the development of syphilis	224
Fox, Dr. Tilbury, case of tinea circinata of the hand.	112
„ „ on an unusual form of eczema labialis	114
„ „ on contagious impetigo	118
„ „ on prurigo	120
„ „ on the nature and treatment of eczema	113
„ Dr. W. R., case of coccyodynia	331
GALVANIC and faradic currents, comparative value of the. By A. D. Rockwell, M.D.	151
Ganglions, on. By F. C. Skey, C.B., F.R.S.	190
Gangrene, hospital, on. By W. R. E. Smart, M.D., C.B.	221
Gastric affections, on the treatment of the, which occur during pulmonary phthisis. By M. Peter	98
Gastritis, phlegmonous, specimen of. By W. Moxon, M.D.	100
Germ theory, on the medical aspects of the. By Benjamin W. Richardson, M.D., F.R.S.	1
Gibb, Dr. C. J., ligature of the superficial femoral artery on Lister's plan.	284
Gillespie, Dr. C.B., remarks on poisoning by strychnine	125
Glands, lymphatic, treatment of enlarged. By Furneaux Jordan	220
Gonorrhœa and gleet, on. By F. C. Skey, C.B., F.R.S.	193
Gordon, Dr., case of perforation of the intestine	100
Granulations, palpebral, on. By Dr. Hilarion	247
Greene, Dr. Warren, on the reduction of dislocations	219
Gübler, M., on mercury in the treatment of syphilis	172
Guttmann, M., on the pathology of the great sympathetic	45
HABERSHON, Dr. S. O., remarks on the ill-effects of chloral	156
Hæmatocele, pelvic, on. By F. Küchenmeister	336
Hæmorrhage, uterine, on. By Robert Barnes, M.D.	314
Hamilton, Mr., on the microscopical appearances of cancer	12
Hand, Dr. H. C., on the microscopical characters of the blood in relapsing fever	12
Hanging, suicidal, case of. By Dr. Packard	127
Hare-lip, on a new method of effectually remedying the defect of. By William Stokes, Jun., M.D.	232
Harrison, Mr. Reginald, case of excision of the shoulder-joint	280
Hayem, M., on purpura hæmorrhagica	118
Headache, sick, a case of. Under the care of Dr. Buzzard	47
Heart, cases of malformation of the. By Thomas Peacock, M.D.	84
Heath, Mr. Christopher, case of aneurism of the aorta	255
„ „ myxomatous tumour in the calf—operation—recovery	301

	PAGE
Hémeý, Dr., on the state of the pulse immediately before and immediately after parturition	308
Hemiplegia, functional, in child-bearing women. By Clifford Allbutt, M.D.	333
Herniæ, irreducible, on the treatment of. By C. Holthouse	259
Heslop, Dr. T. P., case of Addison's disease	35
Hewitt, Dr. Graily, on a new instrument for securing the pedicle in the operation of ovariectomy	331
" " on strangulation of the uterus	339
Hilarion, Dr., on palpebral granulations	247
Hill, Mr. John D., on urinary stricture	269
" " on the torsion of arteries	203
Hip, on a case of dislocation of the, into the thyroid foramen—reduction with aid of pulleys, after failure by manipulation. By Campbell de Morgan, F.R.S.	297
Hip-joint, excision of the. By John Wood	292
" on a case of dislocation of the, downwards and inwards, reduced by manipulation. By Joseph Lister, F.R.S.	297
Hodge Dr. H. L., on the treatment of irritable uterus	338
Hæmoptysis, treatment of. By Dyce Duckworth, M.D.	80
Holden, Mr. Luther, case of partial removal of the breast for scirrhus.	254
Holthouse, Mr. C., on the treatment of recent irreducible herniæ	259
Hood, Dr. Wharton P., on two cases of excision of tonsil followed by hæmorrhage	233
Housemaid's knee, on. By F. C. Skey, C.B., F.R.S.	186
Humerus, removal of a tumour of the lower part of the. By Sir W. Fergusson Bt., F.R.S.	279
Huchard, M., on the symptoms and diagnosis of membranous dysmenorrhœa	323
Hulke, Mr., case of caries of condyle of the femur	293
" case of acute inflammation of knee-joint, amputation with Teale's flaps	294
" case of periostitis and caries of the tibia	295
Hueter, Dr., on arterial transfusion	261
Hutchinson, Dr. J. C., on acupressure	231
Hydatids, uterine, case of. By E. J. Tilt, M.D.	329
Hydrocele of the tunica vaginalis, on the treatment of. By Prof. Albanese	262
Hydrocephalus, chronic. By W. Howship Dickinson, M.D.	352
ICHTHYOSIS, on. By George Nayler	122
Ilium, case of fracture of the anterior superior spinous process of the, by muscular contraction. By S. Joy, M.D., and J. W. McWhinnie, M.D.	259
Impetigo, remarks on. By Tilbury Fox, M.D.	118
Indigestion, acute, treatment of. By T. K. Chambers, M.D.	94
Infection, choleraic. By Richard Lewis, M.D.	35
Inflammation, experiments on the phenomena of which the white-blood corpuscles and the walls of capillary vessels are the seat during. By M. Robin	88
" local, in certain defined conditions as causes of pulmonary phthisis. By Andrew Clark, M.D.	81
" suppurative, experimental researches on. By M. Picot	15
Insane, on general paralysis of the. By Prof. Colin	65

	PAGE
Insanity, syphilitic. By H. G. Stewart, M.D.	179
„ the thermometer in the diagnosis of. By T. S. Clouster, M.D.	179
Instruments, ancient and modern. By James Barnes	136
Intestines, case of perforation of the. By S. Gordon, M.D. . .	100
Intra-uterine medication, on. By J. C. Nott, M.D.	342
Intussusceptio in an infant cured by inflation of the bowel. Under the care of Dr. Wilks	350
Iodine as a topical application to wounds. By James Stirton, M.D. .	145
Iron, perchloride of, in cases of necrosis, fistulous tracts, and hydrocele. By Prof. Marcacci	263
Isambert, M., on the action of carbolic acid in variola	142
JACKSON, Dr. Samuel, on a rare disease of the joints	220
Jacobi, Dr. A., on the antiphlogistic treatment in diseases of children .	354
James, Mr. J. H., on blistering in urgent cases	174
Jaundice from mental emotion. By Samuel Wilks, M.D., F.R.S. . .	102
Johnson, Dr. George, on scarlet fever and its prevention	17
Joints, on a rare disease of the. By Samuel Jackson, M.D. . . .	220
„ on wounds into. By F. C. Skey, C.B., F.R.S.	188
Jones, Dr. Handfield, on abdominal neuralgia	67
Jordan, Mr. F., on the effects of congenitally small urinary meatus in the male	271
„ „ on the treatment of enlarged lymphatic glands	220
Joy, Dr. S., a case of fracture of the anterior superior spinous process of the ilium by muscular contraction	259
KENNEDY, Dr. Henry, case of pneumonia; enlarged kidneys	76
Kidney, case of fatal injury to the, in a subject possessing only one kidney. Under the care of Mr. James Taylor	257
„ lardaceous disease of the, consequent on abscess of the ovary. By William H. Dickinson, M.D.	334
„ report of a case of extirpation of the. By Prof. Simon	255
Knee-joint, acute inflammation of, amputation with Teale's flaps. Under the care of Mr. Shaw and Mr. Hulke	294
Kuchenmeister, Dr., on peri-uterine or pelvic hæmatocele	336
LABADIE-LAGRAVE, M., on the symptoms and diagnosis of membranous dysmenorrhœa	323
Labour, complex, remarkable case of. By T. M. Madden, M.D. . .	306
„ induction of, by means of the uterine douche. By W. Whalley	316
Lachrymal apparatus, treatment of lesions of the. By T. Bickerton .	248
Lambert, Mr. E., on the influence exerted by chloral on the pain of parturition	157
Laycock, Dr. T., on epileptic chorea of the right arm	178
Laryngoscope, on the application of the. By J. M. Da Costa, M.D. .	177
Larynx, removal of a penny from the. By John Cameron, M.D. . .	234
„ on primary cancer of the. By Dr. Desormeaux	235
Laveran, Dr., on abortive typhoid fever	27
Lawson, Mr. George, on skin-transplantation	204
Leared, Dr. Arthur, on the use of arsenic in certain painful affections of the stomach and bowels	168
Lee, Mr. Henry, on the removal of subcutaneous tumours	214

	PAGE
Leucocythemia, acute, in connexion with pregnancy. By R. Paterson, M.D.	312
Lewis, Dr. Richard, on choleraic infection	35
Life, principles of treatment at the change of. By E. J. Tilt, M.D. .	327
Lister, Mr. Joseph, on a case of dislocation of the hip-joint downwards and inwards, reduced by manipulation	297
Lumbago, on the treatment of. By Samuel Wilks, M.D., F.R.S. . .	34
Lund, Mr. E., on chloride of aluminium	143
Lusk, Dr. W. T., on the origin of diabetes	109
 MACCORMAC, Dr. William, recollections of work in an ambulance .	250
Mackenzie, Dr. Morell, two cases of stricture of the œsophagus . .	238
Macleod, Dr. George H. B., case of partial excision of the tongue .	252
„ „ case of blood tumour of the head	233
„ „ case of tetanus	217
„ Dr. William, on the action of hydrate of chloral in paralysis of the insane	158
Madden, Dr. T. M., on acute inversion of the uterus	340
„ „ remarkable case of complex labour	306
Marcacci, Prof., on the employment of perchloride of iron and of manganese in cases of necrosis and hydrocele	263
Marshall, Dr. William, on diphtheria and its treatment	75
McElroy, Dr. Z. C., on the bromides	139
Meat, raw, in diarrhoea and dyspepsia. By Robert Drutt, M.R.C.P. .	93
Medicine and surgery, on certain circumstances which impede the progress of. By Campbell Black, M.D.	14
Meigs, Dr. C. L., on cyanosis neonatorum	87
Membrana tympani, on irrigation of the. By M. Prat	249
Menzel, Dr., on the treatment of ulcerated neoplasms by gastric juice	222
Meningitis, tubercular. By Dr. Vogel	350
Menorrhagia and dysmenorrhœa, Indian hemp in. By A. Silver, M.D. .	331
Mercury, bichloride of, in nervous affections. By Samuel Wilks, M.D., F.R.S.	173
„ in syphilis, on. By M. Gübler	172
Meryon, Dr. Edward, on the functions of the sympathetic system of nerves	46
Miasms, on the nature and origin of. By M. Balæstra	13
Microzoa and microphytes, on the part played by, in the genesis, evolution, and propagation of diseases. By Dr. Ranse	32
Miller, Dr. G., case of tumour of the bones of the skull	251
„ Dr. Hugh, on the diet of parturient women	315
Mitscherlich, Dr., on the treatment of strictures of the urethra by the introduction of horse-hair and perforated bougies	267
Morache, M., on the employment of creasote in the treatment of typhoid fever	176
Moura, D., on the nature and treatment of quinsy	92
Moxon, Dr., case of phlegmonous gastritis	100
Mucus disease. By Walter Whitehead	91
Murault, Dr., on the treatment of cicatricial ectropion	247
Murchison, Dr. Charles, on hydrate of chloral in pertussis	156
„ „ cases of rôtheln, or German measles	23
„ „ on the treatment of delirium tremens	38
Murray, Dr. John, case of acute dysentery	101
Muscular contractility, on the state of. By M. Robin	59

	PAGE
NATHAN, Mr. H. F., on the use of vinum aloes in ulceration	175
Naylor, Mr. George, on ichthyosis	122
Neck, broken, case of. By J. Fayrer, M.D.	236
Neoplasms, ulcerated, on the treatment of, by gastric juice. By Dr. Menzel	222
Nerves, on the functions of the sympathetic system of. By Edward Meryon, M.D.	46
Neuralgia, abdominal, cases of. By Handfield Jones, M.D.	67
„ hypogastrica, on. By Albert Eulenberg, M.D.	42
Neuritis, optic, on. By Brudenell Carter	239
Nott, Dr. T. C., on intra-uterine medication	342
ESOPHAGUS, two cases of stricture of the. By Morell Mackenzie, M.D.	238
Ogle, Dr. John, report of a case of tetanus	53
Ollier, M., on osseous degeneration after sub-periosteal articular resections	214
Operations, capital, on the results of, before and after the employment of anæsthetics. By Prof. Simonin	200
Ophthalmia, chronic, treatment of. By John Williams, M.D.	171
Os uteri, styptic colloid in ulceration of the. By C. Wynne, M.D.	330
Osseous degeneration after sub-periosteal articular resections. By M. Ollier.	214
Ovarian disease, on the determination of the length of the pedicle in. By M. Tixier	315
Ovariectomy, on a new instrument for securing the pedicle in the operation of. By Graily Hewitt, M.D.	331
Oxley, Dr. M., on hydrate of chloral	155
PACKARD, Dr., case of suicidal hanging	127
Pain, on the suppression of, after operations. By M. C. Sedillot	199
Pallen, Dr., case of absence of the vagina	334
Palsy, shaking, on. By B. Ball, M.D.	60
Panas M., a case in which two diarthrodial cartilages had been united by means of true cartilage.	302
Paralysis, general, of the insane, on. By Prof. Colin	65
„ traumatic facial, cases of. By Prof. Erb.	253
Parasites, on. By A. Davidson, M.D.	123
Paresis, general, the etiology of. By W. H. O. Sankey, M.D.	64
Parturition, on the influence exerted by chloral on the pain of. By E. Lambert	157
Patellæ, ligamentum, on the treatment of rupture of the. By Dr. Sistach	303
Paterson, Dr. R., cases of acute leucocythemia in connexion with pregnancy	312
Pelvet, M., on the physiological and therapeutical actions of conium and its alkaloid	163
Peacock, Dr., cases of malformation of the heart	84
Pelvis, on tumours of the, obstructing delivery. By Edwd. Cope- man, M.D.	318
Perroud, Dr., on sulphate of quinine in erysipelas	172
Pertussis, hydrate of chloral in. By Charles Murchison, M.D., F.R.S.	156
Peter, M., on the treatment of the gastric affections which occur during pulmonary phthisis	98
Petit, M. Henri, on inguinal phlebitis consecutive to compression of the femoral artery in the fold of the groin	285
Philpison G. H., on a case of biliary fistula	104

	PAGE
Phlebitis, on. By F. C. Skey, C.B., F.R.S.	188
,, inguinal, consecutive to compression of the femoral artery in the fold of the groin. By M. Henri Petit	285
Phthisis, on. By Dr. Aufrecht	76
Picot, M., experimental researches on suppurative inflammation	15
Placenta prævia, on. By T. Gaillard Thomas, M.D.	318
Pneumogastrics, cervical, on the influence of section of the, upon the action of emetics and cathartics. By Horatio C. Wood, jun., M.D.	183
Pneumonia, case of; enlarged kidneys. By Henry Kennedy, M.D.	76
,, on the expectant treatment of. By Dr. Le Beuf	79
Pollock, Mr., on skin-transplantation	203
Potassium, bromide of, in diabetes. By Austin Flint, M.D.	139
,, ,, in sick headache. By L. P. Yandell	140
,, iodide of, in the treatment of syphilitic skin diseases. By J. McCall Anderson, M.D.	143
,, ,, on the influence of, over salts of mercury. By G. E. Walker	144
Prat, M., on irrigation of the membrana tympani	249
Pregnancy, on the influence of constitutional syphilis upon. By Dr. Weber	316
,, without menstruation. By James Young, M.D.	311
,, extra-uterine, case of. By J. Hall Davis, M.D.	311
Prurigo, clinical remarks on. By Tilbury Fox, M.D.	120
Pulse, state of the, immediately before and immediately after parturi- tion. By Dr. Hémey	308
Purpura hæmorrhagica, on. By M. Hayem	118
Putrefaction, fermentation, and infection, on. By Ernest Sansom, M.D.	11
QUININE, the use of, in the diseases of childhood. By C. Bing, M.D.	171
Quinine, sulphate of, in erysipelas. By Dr. Perroud	172
Quinquad, M., on muscular lesions observed in small-pox	29
Quinsy, on the nature and treatment of. By Dr. Moura	92
RABUTEAU, M., on the action of alkalines on the organism	145
Ragland, Dr. A. M., on veratrum viride in dysentery	177
Ranse, Dr., on disinfectants	147
,, on the part played by microzoa and microphytes in the genesis, evolution, and propagation of diseases	32
Ranula, on. By F. C. Skey, C.B., F.R.S.	187
Rasch, Dr., on air in the vagina	332
Renfrew, Dr. R., on scarlet fever, with especial reference to pathology and treatment	22
Retinitis, albuminuric. By A. Robertson, M.D.	246
Reverdin, M., on the cause of the special gravity of anthrax and boils of the face	249
Reynolds, Dr. J. Russell, on the therapeutical uses of electricity	148
Richardson, Dr. Benjamin W., on the medical aspects of the germ theory	1
,, ,, on the nitrite of amyl, the ethylates of sodium and potassium, and the triethylic and the trimethylic ethers	134
Roberts, Dr. William, case of a man who had a vesicular eruption on the abdomen, which discharged at times great quantities of chy- lous fluid	122
Robertson, Dr. Argyle, on albuminuric retinitis	246

	PAGE
Robin, M., experiments on the phenomena of which the white-blood corpuscles and the walls of capillary vessels are the seat during inflammation	88
„ „ on muscular contractility	59
Rockwell, Dr. A. D., on the galvanic and faradic currents	151
Rokitansky, Prof., on cyanosis	86
Rötheln, or German measles, case of. By Charles Murchison, M.D., F.R.S.	23
Russell, Mr. John, case of femoral aneurism, cured by rapid pressure	281
SANKEY, Dr. W. H. O., on the etiology of general paresis	64
Sansom, Dr. Ernest, on putrefaction, fermentation, and injection .	11
„ „ on the sulpho-carbolates, and the antiseptic method in medicine	148
Sclerosis of the brain and spinal cord. By M. Clymer, M.D. . . .	58
Sedillot, Prof., on the suppression of pain after operations . . .	199
Sée, M., on epidermic transplantation	212
Senac, Dr., on hepatic colic	104
Sex of a child, the stethoscope as a means of ascertaining the. By J. Cumming, M.D.	313
Shaw, Mr., case of acute inflammation of knee-joint, amputation with Teale's flaps	294
„ „ case of periostitis and caries of the tibia	295
Sheehy, Dr. W. H., autopsy of a case of cyanosis	86
Shoulder-joint, case of excision of the. By Reginald Harrison . .	280
Signerolles, M., on hepatic fistula	105
Silver, Dr. Alexander, on Indian hemp in menorrhagia and dysmenorrhœa	331
Simon, Prof., report of a case of extirpation of the kidney	255
Simonin, Prof., on the results of capital operations before and after the employment of anæsthetics	200
Sistach, Dr., on the treatment of rupture of the ligamentum patellæ	303
Skey, Mr. Frederic C., clinical remarks on some stray subjects of hospital surgery	184
„ „ on abscess in different localities	184
„ „ on housemaid's knee	186
„ „ on ranula	187
„ „ on phlebitis in its chronic form	188
„ „ on wounds into joints	188
„ „ on air in wounds	189
„ „ on ganglions	190
„ „ on burns	190
„ „ on cicatrices from burns	191
„ „ on refracture of bones	192
„ „ on gonorrhœa and gleet	193
„ „ on syphilis	193
Skin-transplantation, on. By G. Pollock	203
„ „ on. By George Lawson	204
„ „ on. By N. Dobson	212
„ „ of, in the treatment of ulcers and other granulating surfaces	205
Skull, tumour of the bones of the, case of. By L. R. Thomson, M.D., and A. G. Miller, M.D.	251
Small-pox, on muscular lesions observed in. By M. Quinquad . .	29
Smart, Dr. W. R. E., on hospital gangrene	221

	PAGE
Smith, Dr. Eustace, on the treatment of aphthæ	90
Smith, Dr. Robert W., on fractures of the sternal extremity of the clavicle	278
" Mr. H., case of popliteal aneurism	282
Sodium and potassium, the ethylates of. By Benjamin W. Richardson M.D., F.R.S.	134
Soulier, Dr., critical study of typhoid fever	28
Spermatorrhœa, on. By F. W. Teevan	264
Squire, Mr., on temperature deviations in the diseases of children	347
Steele, Dr. A. B., on the value and safety of arm-to-arm vaccination	129
Stern, Dr. Alexander W., on the abortive treatment of urethritis	264
Stewart, Dr. Grainger, on syphilitic insanity	179
Stirton, Dr. James, on iodine as a topical application to wounds	145
Stokes, Dr. William, on a new method of effectually remedying the defect of hare-lip	232
" " treatment of stricture	266
" " on supra-condyloid amputation of the thigh	295
Stomach and œsophagus, diagnosis of diseases of the. By Samuel Wilks, M.D., F.R.S.	97
Stone in the bladder, twenty cases of. By W. F. Teevan	271
Stricture, treatment of. By William Stokes	266
" urinary, analysis of cases of. By John D. Hall.	269
Strychnia, chloral an antidote to. By J. H. Bennett, M.D.	126
" poisoning by, treated by bromide of potassium. By C. B. Gillespie, M.D.	125
Sulpho-carbolates, on the. By A. Ernest Sansom, M.D.	148
Sympathetic, great, on the pathology of the. By MM. Eulenburg and Guttman	45
Syphilis, on. By F. C. Skey, C.B., F.R.S.	193
" on mercury in the treatment of. By M. Gübler	172
" on the early stages of, as affecting the skin. By E. A. Browne, M.D.	229
" on the laws which preside over the development of. By M. Fournier	224
" transmission of, from the nurse to the child. By Dr. Dron	228
" treatment of. By J. M'Call Anderson, M.D.	124
Syphilitic subjects, researches on the alteration in the weight of the body of, before and after treatment. By Dr. Tomowitz	37
Syphilization, on. By Freeman J. Burnstead, M.D.	228
TAIT, Mr. Lawson, on the cure of the chronic perforating ulcer of the bladder	272
Taylor, Mr. James, report of a case of fatal injury to the kidney in a subject possessing only one kidney	257
Teevan, Mr. F. W., on spermatorrhœa	264
" Mr. W. F., on twenty cases of stone in the bladder	271
Tetanus, on. By D. W. Yandell, M.D.	218
" on the pathogeny of. By MM. Arloing and Leon Tripier	53
" case of. By G. H. B. Macleod, M.D.	217
" report of a case of. By John W. Ogle, M.D.	52
Therapeutics, respiratory	137
Thigh, on supra-condyloid amputation of the. By W. Stokes, jun. M.D.	295
Thigh-bone, on subcutaneous division of the neck of the. By William Adams	291
Thomas, Dr. T. Gaillard, on placenta prævia	318
" " the histories of four cases of chronic inversion of the uterus	340

	PAGE
Thompson, Dr. Henry, case of acute renal dropsy	107
„ Sir Henry, on external urethrotomy	265
„ „ on internal urethrotomy	265
Thomson, Dr. L. R., case of tumour of the bones of the skull	251
Thorowgood, Dr. J. C., on arsenic in irritative dyspepsia	169
Tibiæ, periostitis and caries of. Under the care of Mr. Shaw and Mr. Hulke	295
Tilt, Dr. E. J., principles of treatment at the change of life	327
„ „ case of uterine hydatids	329
„ „ on uterine pathology at the change of life and after the ménopause	330
Tinea circinata of the hand, case of. Under the care of Tilbury Fox, M.D.	112
Tixier, M., on the determination of the length of the pedicle in ovarian disease	335
Tomowitz, Dr., on the alterations in the weight of the body of syphilitic subjects before and after treatment	37
Tongue, on coating of the. By J. M. Da Costa, M.D.	90
„ partial excision of the. By G. H. B. Macleod	252
Tonsil, excision of the, followed by hæmorrhage. By W. P. Hood, M.D.	233
Transfusion, arterial. By Drs. Hueter and Albanese	201
Tremblay, M., on cutaneous eruptions after operations and during the course of surgical septicæmic affections	117
Tripier, M., on the pathogeny of tetanus	53
Tumour, blood, of the head, case of. By G. H. B. Macleod, M.D.	233
„ myxomatous, in the calf—operation. By Christopher Heath	301
Tumours, hydatid, on the electrolytic treatment of. By C. Hilton Fagge, M.D., and Arthur Durham	141
„ subcutaneous, on the removal of, without hæmorrhage or loss of skin. By Henry Lee	214
Tumour, syphilitic gummatous, occurring fifty-five years after the commencement of the infection. By M. Alfred Fournier	299
Turnbull, Dr. James, on the treatment of pulmonary consumption	82
ULCERS, the treatment of, by transplantation of skin	205
Urethra, on the treatment of strictures of the. By Dr. Mitscherlich	266
„ „ of impermeable stricture of the. By W. Stokes	266
Urethritis, on the abortive treatment of. By A. W. Stein, M.D.	264
Urethrotomy, external, on. By Sir Henry Thompson	265
„ internal, on. By Sir Henry Thompson	265
Urinary calculi, table for the examination of. By J. C. Brown, D. Sc.	180
„ meatus, on the effects of congenitally small, in the male. By Furneaux Jordan	271
Urine, belladonna in nocturnal incontinence of. By J. B. Yeo, M.B.	181
Uterine medication. By J. C. Nott, M.D.	342
„ pathology, on, at the change of life and after the ménopause. By E. J. Tilt, M.D.	330
Uterus, acute inversion of the. By T. M. Madden, MR.I.A.	340
„ a case of amputation of an inverted. By Dr. Wilde	270
„ inflammatory conditions of the, and its displacements. By Henry Bennet, M.D.	339
„ irritable, treatment of. By H. L. Hodge, M.D.	338
„ on strangulation of the. By Graily Hewitt, M.D.	339
„ the histories of four cases of chronic inversion of the. By T. G. Thomas, M.D.	340

	PAGE
Vaccination, on	128
„ animal, on. By P. M. Braidwood, M.D.	132
„ arm-to-arm, the value and safety of. By A. B. Steele, M.D.	129
Vagina, a case of absence of the. By Dr. Pollen	334
„ on air in the. By Dr. Rasch	332
Variola, on the action of carbolic acid in. By M. Isambert	142
„ on the diagnosis, prognosis, and treatment of. By M. Desnos	30
Veratrum viride in dysentery. By A. M. Ragland, M.D.	177
Vitality, lowered, on the preservative agency of. By J. M. Fothergill, M.D.	14
Vogel, Dr., on the treatment of croup	75
„ on tubercular meningitis	350
WAHLTUCH, Dr., on electrolysis in bronchocele and other tumours	153
Walker, Mr. G. E., on the influence of iodide of potassium over salts of mercury in presence of the various organic substances in the animal economy	144
„ Mr. T. S., on the treatment of ulcers of the cornea and nebulæ	240
Weber, Dr., on the influence of constitutional syphilis upon pregnancy	316
Whalley, Mr., a case of induction of premature labour	316
Whitehead, Mr. Walter, on mucus disease	91
Wible, Dr., on cholera infantum	352
Wilde, Dr., case of amputation of an inverted uterus	270
Wilks, Dr. Samuel, case of intussusceptio in an infant cured by inflation of the bowel	350
„ „ on bichloride of mercury in nervous affections	173
„ „ on Bright's disease	107
„ „ on jaundice from mental emotion	102
„ „ on the diagnosis of diseases of the stomach and œsophagus	97
„ „ on the treatment of lumbago	34
Williams, Dr. Henry W., on nitrate of silver in conjunctivitis	169
Williams, Dr. John, a new and most useful eye-salve	171
Wilson, Prof. Erasmus, on the anæsthetic properties of carbolic acid	111
Wood, Dr. Horatio, on acetic ether as an anæsthetic	159
„ „ on the influence of section of the cervical pneumogastrics upon the action of emetics and cathartics	193
„ Mr. John, on excision of the hip-joint	292
Wounds, bullet, on. By Prof. Billroth	219
„ iodine as a topical application to. By James Stirton, M.D.	145
„ on air in. By F. C. Skey, C.B., F.R.S.	189
Wrist, specimen of dislocation of the. By J. E. Adams	277
Wynne, Dr., on styptic colloid in ulceration of the os uteri	330
YANDELL, Dr. D. W., on tetanus	218
„ Dr. L. P., on bromide of potassium in sick headache	140
Yeo, Mr. J. B., on the action of belladonna in arresting nocturnal incontinence of urine	181
Young, Dr. James, on pregnancy without menstruation	311
ZEISSL, Prof., on the diagnosis and prognosis of venereal buboes	276



